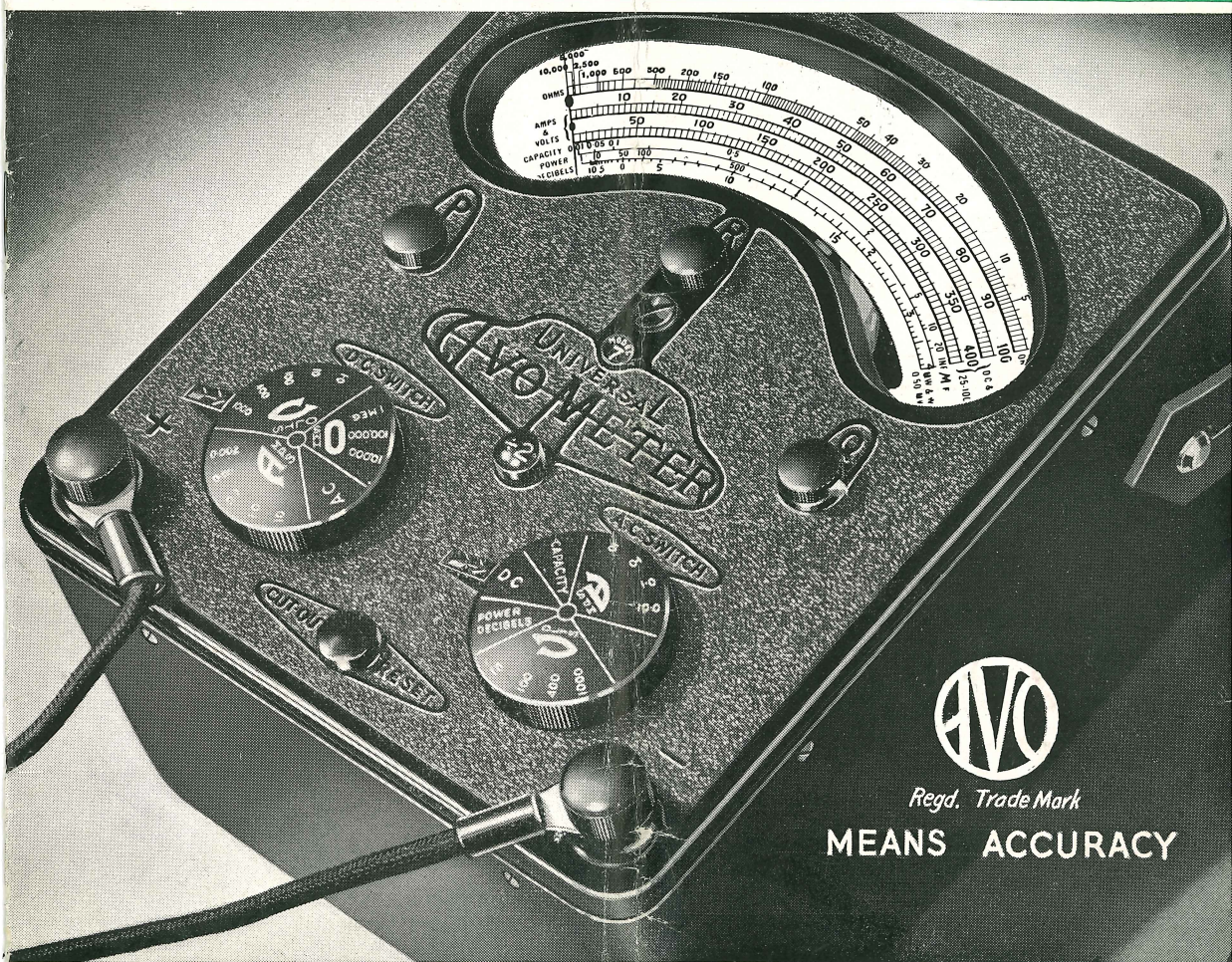


R·S·G·B

VOLUME 18 • NO. 8 • COPYRIGHT • PRICE 1/6 FEBRUARY 1943

BULLETIN

JOURNAL OF THE RADIO SOCIETY OF GREAT BRITAIN



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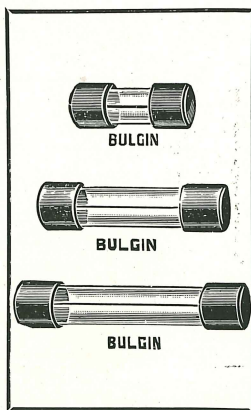
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R.S.G.B. BULLETIN

OFFICIAL JOURNAL OF THE INCORPORATED RADIO SOCIETY OF GREAT BRITAIN

Published on or about the 15th of each month. Issued free to members.

General Editor : JOHN CLARRICOATS.

Editorial Office:
16 ASHRIDGE GARDENS,
LONDON, N.13

Telephone: Palmers Green 3255



Advertisement Manager : HORACE FREEMAN.

Advertising Office:
PARRS ADVERTISING LTD., 121 KINGSWAY,
LONDON, W.C.2

Telephone: Holborn 2494

Honorary Editor : JAMES W. MATHEWS.

VOL. XVIII.

FEBRUARY, 1943

No. 8

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THE MIRACLE OF CHINA

THAT the average Britisher is interested in China has been proved by the remarkable response given to the United Aid to China Fund, but how many, we wonder, are aware of the vast amount of Japanese strength which has been absorbed by our great Ally during the past six years. Evidence of this, and other facts no less significant, was brought home forcibly to those who had the good fortune recently to listen to a talk by Mr. Wilson Temple, of the Ministry of Information, entitled "The Miracle of China."

That we are lamentably ignorant of what is happening in China is due to a variety of causes, chief of which is the lack of good communications. Even in peace-time we radio amateurs "with the world at our finger tips" considered it rather an achievement to work China. Now that amateur transmitting has "gone into a state of suspended animation," to quote Mr. Bevan Swift, our contemporary knowledge of amateur activities in the Far East is to all intents and purposes negligible. It will therefore surprise members to learn that the flag of Amateur Radio is flying bravely in Chungking, and other parts of China not under Japanese control.

As a tribute to China and because the Council feels that the maximum publicity should be given to the appeal, we reproduce below a copy of a letter sent to the Society by Mr. U. T. Hsu, President of the China Amateur Radio League.

"We have the pleasure to inform you that we are to hold our fifth Convention on May 5, 1943, in Chungking—our war capital. All sections of our League will participate on that occasion, through our radio network, as they have done during previous Conventions. May 5 is now known in China as 'China Amateurs' Day' and our Annual Convention is to be held on that day throughout China.

"In conjunction with the 1942 Convention we sponsored a Nation-wide Amateur Radio Show at which were displayed QSL cards from different countries, ham equipments, as well as a number of radio products of the Chinese radio manufacturing companies. Radio trophies, such as Jap-made hand generators, throat microphones, field sets, etc., captured in the field by our army, were also among the exhibits.

"We are planning to hold another, but larger, show during the coming Convention. It will be larger, in the sense that it will be world-wide instead of only nation-wide. We are trying to collect everything possible in connection with radio amateur activities from all our Allied nations. Anything that is of interest, no matter whether it is a book or a photo, a drawing or a reel of movies, some QSL cards or log sheets. No matter whether it is new or old and personal or belonging to a Club, every item will be welcome.

"As Great Britain is one of our Allied Nations and as we have contacted a number of British amateur stations through XUOA, our Headquarters station, we do not hesitate to write you this letter asking for your kind co-operation in this event. The stations which we contacted were G2LU, 2TR, 3BI, 4CL, 8DL, etc. Any assistance rendered through your kindness will certainly be most highly appreciated. We want to make the forthcoming Convention and Show a success. This will not only help to promote the Chinese people in the study of radio science in particular, but also increase their interest and understanding of international relations, both of which are important and vital, especially during the present war against Fascism and Hitlerism.

"Nevertheless, we cannot succeed without the help and co-operation of our foreign friends. If you will be good enough as to inform the members of your Society, and kindly ask them to collect things for us, we shall certainly be very much obliged."

Time is short if we are to provide our friends in China with evidence of our interest in their activities, but we feel sure that every member who is in a position to do so will make some contribution. The despatch of QSL cards may present difficulties, but station, as well as personal, photographs, suitably autographed will, we suggest, prove very acceptable. These should be sent to Headquarters to arrive not later than February 27. The sender's name, call sign and address should be printed in bold letters on the reverse of each photograph but no correspondence should be included. Through the co-operation of the Ministry of Information, copies of Society publications have already been despatched.

The opportunity was taken at the January I.E.E. Meeting and also at the last North London Meeting to obtain signatures to a letter of greetings, and this too is on its way to China.

Incidentally it was at a Rotary Club luncheon that we listened to that talk on "The Miracle of China." We commend the suggestion to Rotarians that when opportunity presents itself, they address their colleagues on "The Spirit of Amateur Radio." Rotary and Amateur Radio have much in common.

J. C.

SOME APPLICATIONS OF CATHODE-COUPLED CIRCUITS

By A. HINE, B.Sc. (TECH.), BRS4438.

PART I.

TWO interesting developments of the Cathode Follower, described in the May, 1942, issue by J. Hargreaves, G5VO, are the Infinite Impedance Detector, and, for want of a better name, the Tuned Cathode H.F. Amplifier. The latter has been incorporated in the writer's short-wave receiver, as a natural development of the conventional Cathode Follower.

It is hoped that the following notes on actual receivers and their performance may be of interest, since it is evident that in V.H.F. work and in matching circuits, cathode-coupled circuits are to play an important part.

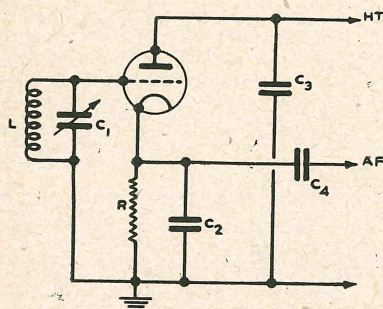


Fig. 1.

Circuit of Infinite Impedance Detector.

The Infinite Impedance Detector

This circuit is shown in its elementary form in Fig. 1. LC_1 is the input circuit across which the voltage applied to the valve is developed. R is a high resistance in the cathode lead shunted by capacity C_2 to by-pass R.F. currents. The anode is held at earth potential by the A.F. by-pass condenser C_3 . The rectified voltage developed across R is fed to the succeeding A.F. stage by the condenser C_4 .

It can be shown that if the load impedance Z in the

cathode circuit (in this case the high resistance R is used for this load) is large, compared with the reciprocal of the mutual conductance, g , of the valve, almost the whole of the voltage developed across LC_1 will appear across R . Since for most valves $1/g$ is of the order of three or four hundred ohms, this condition is easily satisfied and thus such a circuit may conveniently feed into an impedance of a few thousand ohms quite satisfactorily.

It can also be shown that the greater the value of R (or Z), the more nearly does the gain approach unity. This will also be readily appreciated from a study of the curves on page 360 of the May issue of THE T. & R. BULLETIN.

There is however a practical limit to the value of this load impedance and there is not much to be gained by exceeding about 20,000 ohms when using a medium impedance triode such as the MH4 or HL4+. This is demonstrated in Fig. 2. The formula used to obtain this curve is derived in the mathematical notes which follow later, while the values set out in the graph are given below.

Neglecting inter-electrode impedances,

$$\text{Gain} = \frac{Z}{1000/g + Z}$$

Z = load impedance, g = mutual conductance of valve in milliamps/volt.

The example taken is a Tungram HL4+, $g = 2.5$ mA./volt.

Z ohms	500	1,000	2,500	5,000	10,000	20,000	50,000
$1,000/g + Z$	900	1,400	2,900	5,400	10,400	20,400	50,400
Gain	0.56	0.72	0.86	0.93	0.96	0.98	0.99

Load Lines

Since the value of the external load connected to a triode valve determines its working characteristics,

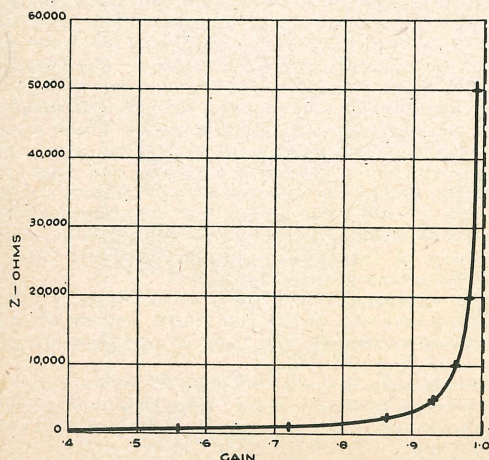


Fig. 2.

Curve showing relationship between gain of Cathode Follower and Load Impedance.

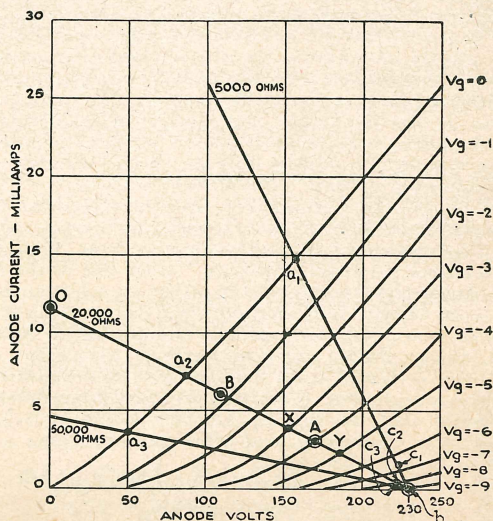


Fig. 3.

Anode characteristics and load lines—Infinite Impedance Detector.

a study of what are known as "load lines" is of interest. In Fig. 3, the anode characteristics of an average triode are shown (anode volts plotted against anode current, there being a separate curve for each value of grid voltage) from which the anode current for various combinations of anode volts and grid volts may be determined. Now the addition of an external load resistance results in part of the high tension voltage being dropped across this load (according to the value of anode current) and the rest of the high tension voltage being dropped between the anode and cathode of the valve. Thus if we choose a grid voltage of -4 volts, and an anode current of 3 milliamps we determine the point A, which shows that to obtain this current an anode potential of

dropped across the resistance, so that point O shows anode current equal to H.T. volts divided by load resistance.

Thus having chosen a H.T. voltage and a resistance, the load line may be drawn by marking off along the anode current axis, a value equal to H.T. volts divided by resistance and drawing a straight line through this point to the appropriate H.T. potential.

Any point along this line will thus obey Ohm's Law for the particular load, and will also indicate the correct value of grid voltage for any desired anode current, since the working of the valve is fixed by its characteristic curves. The intersection of the load line with any one of these curves determines precisely the behaviour of the valve; since at such a point only can

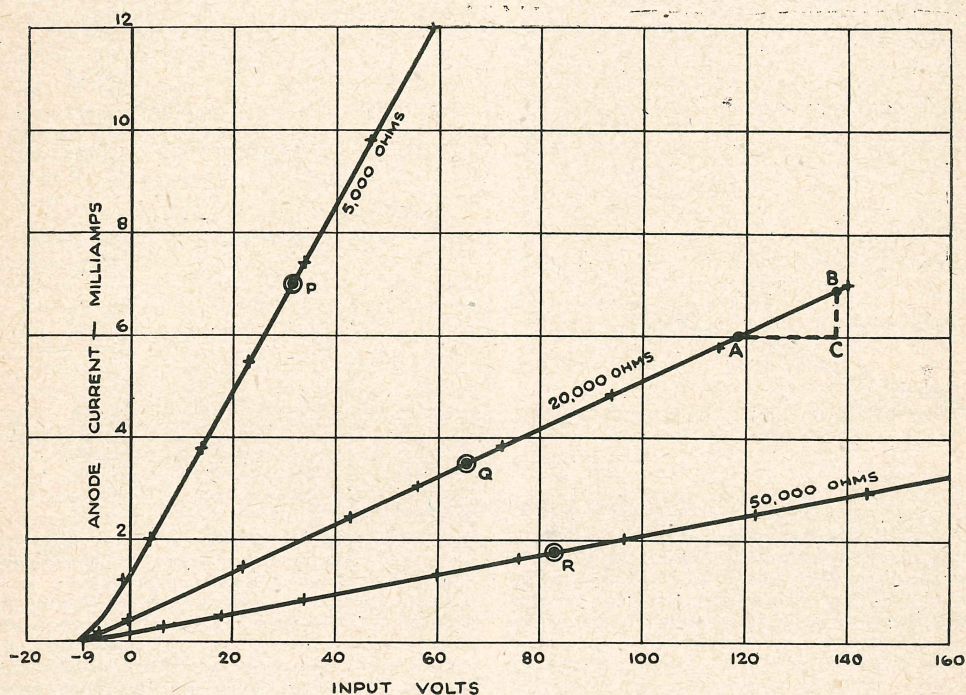


Fig. 4.
Dynamic characteristics—Infinite Impedance Detector.

170 volts is required. Now suppose the anode load is 20,000 ohms. With a current of 3 milliamps, the voltage drop across this resistance is 60 volts, hence the total H.T. voltage required will be $170 + 60 = 230$ volts, of which 60 is dropped across the load and 170 across the valve. If we choose now point B where a current of 6 milliamps flows, there will be double the voltage drop across the resistance, i.e. 120 volts, and only 110 volts dropped across the valve. To enable 6 milliamps to flow at this reduced anode potential, less negative grid volts will have to be applied, in this instance about 0.9 volts negative.

Now since by doubling the anode current we have doubled the voltage drop, the points A and B will lie on a straight line which will cut the base line at 230 volts. This will be obvious when we realise that Ohm's Law must be obeyed for all values of current flowing through a given resistance and that voltage drop is proportional to current, in other words, a straight line law.

Such a straight line is called the "Load Line" for the particular anode load and by extending it to cut the anode current axis at zero anode volts, point O, we have a condition where the whole H.T. voltage is

Ohm's Law, and the law for the particular valve, be obeyed.

Load lines may be drawn for any value of resistance and for any value of H.T. voltage. With 230 volts H.T., lines for 5,000 and 50,000 ohms are shown, as well as for 20,000 ohms. "No load" would be a vertical line passing through the chosen H.T. voltage.

The fact that the load is in the cathode lead makes no difference, since the H.T. voltage is applied across load plus valve, whether the load is connected to the cathode or anode, and in both cases the voltage drop across the load is one and the same thing. Now in a cathode coupled circuit as shown, the voltage drop across the load is applied to the grid of the valve—the resemblance of this circuit to automatic grid bias arrangements will be apparent. The grid will be maintained at a high negative potential with respect to the cathode, since in considering the total voltage dropped from positive anode, *via* cathode and resistance to H.T. negative, the cathode potential will be more negative than the anode, but more positive than the end of the resistance connected to H.T. negative and the grid, *via* the input circuit.

Now the value of this grid bias will be equal to anode current multiplied by resistance. Moreover, the value so obtained must fit both the load line and the valve characteristics, so that the value of grid voltage obtained by multiplying anode current and resistance, must be equal to that grid voltage (as given by the characteristic curves) which allows the particular value of anode current to flow under the given loading conditions.

Such a point is C_2 where the anode current is 0.4 milliamps. The load being 20,000 ohms, the grid voltage developed is -8 volts. It will be seen that

voltage alternates between positive and negative maxima. Thus if we operate the valve at point A, and alter the grid-cathode potential by ± 1 volt, we swing between the points X and Y, which are determined by the load line and the characteristic curves $-4 + 1 = -3$ volts grid bias; $-4 - 1 = -5$ volts grid bias.

X and Y determine the anode current flowing, and if the change in both directions of swing is the same, a reproduction of the grid potential changes appears in the anode circuit.

If, however, the working point is taken practically

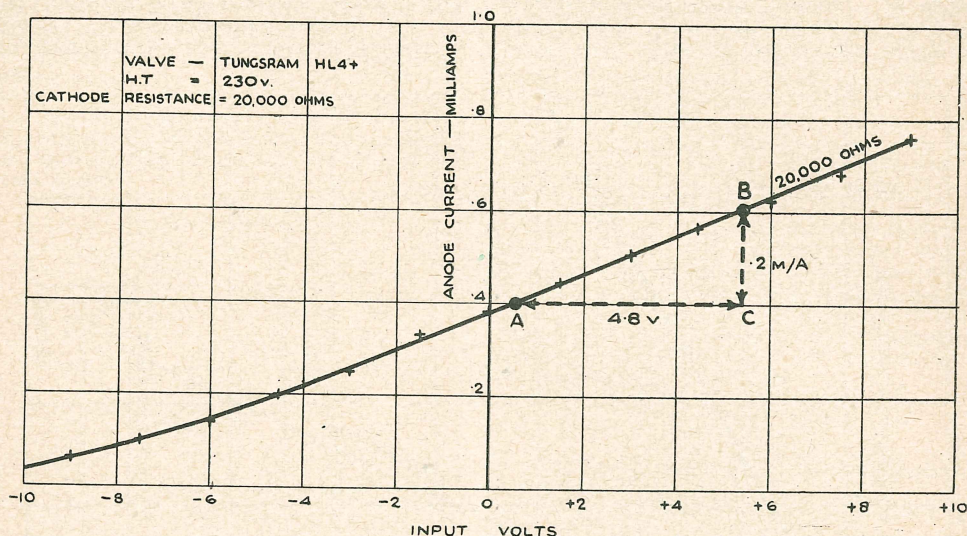


Fig. 5.
Dynamic characteristic—Infinite Impedance Detector in Receiver Circuit of Fig. 6.

at C_2 , -8 volts is required by the characteristic curve to permit 0.4 milliamps to flow. This point C_2 then, is the condition under which the valve functions when no signal is applied to the grid and may be considered the quiescent or equilibrium condition. This point is very close to the "cut-off" of the valve, which is at -9 grid volts when no anode current flows.

When a signal is applied to the grid, the grid

to cut-off, only the positive swing will appear in the anode circuit since the negative swing will have no effect. Thus rectification takes place.

In the circuit now being considered, the equilibrium condition is that of being biased almost to cut-off, and the higher the cathode resistance, the nearer to cut-off is the valve operated. Thus we have a circuit capable of rectifying or detecting high frequency signals.

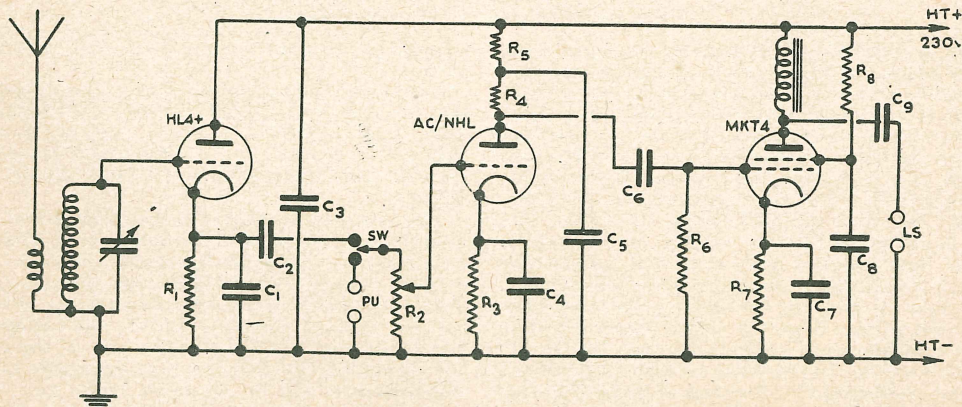


Fig. 6.
Circuit diagram of Receiver with Infinite Impedance Detector.

R1 = 20,000
R2 = 50,000
R3 = 700

R4 = 20,000
R5 = 10,000
R6 = 500,000

R7 = 370
R8 = 9,000

C1 = .0003
C2 = 1.0
C3 = .25

C4 = 30
C5 = .5
C6 = .1

C7 = 30
C8 = 2
C9 = 4

Resistance values in ohms, capacity values in microfarads.

Such a system is sometimes known as anode bend rectification.

Dynamic Characteristics

Fig. 4 is derived from Fig. 3 by plotting the input voltage against anode current. The input voltage is equal to the voltage drop across the resistance plus the grid-to-cathode (or grid bias) voltage. Thus by choosing various anode current values, the corresponding values of grid voltage may be read off from the curves (where the load line cuts the various grid voltage lines for the required current).

This grid voltage is added to the voltage drop across the load resistance, namely anode current multiplied by resistance. This addition (remembering to use the proper sign for grid voltage) gives the input voltage. For instance, when grid volts are zero, anode current is 7 milliams for a load of 20,000 ohms. Thus input volts are $7 \times \frac{1}{1,000} \times 20,000 = 140$ volts. When grid volts are -2, anode current is 4.8 milliams for the same load and so input volts are $4.8 \times \frac{1}{1,000} \times 20,000 - 2 = 94$ volts, and when grid volts are -9, anode current is zero, so that input volts are -9. In this way it will be seen how the curves in Fig. 4 were obtained.

Such curves are called "Dynamic Characteristics" and are remarkable for their "straightness," indicating uniform current changes for equal variation in input volts at different parts of the curve. This means to say that the rectifying properties (and of course amplifying ones too) are good, the absence of a marked bend at the bottom of the curve resulting in absence of distortion when the input voltage increases or decreases in magnitude. It will be observed that the higher values of load resistance give better dynamic characteristics.

For most efficient rectification, the operating or zero signal condition of the valve should be at zero anode current (right at the lower end of the curve), so that no part of the negative half cycle of the signal is accepted by the valve. Thus in the example chosen -9 volts should be applied to the grid (or input) circuit to satisfy this condition. When using the system as an ordinary cathode follower, i.e. as an amplifier, the working point should be in the middle of the characteristic curve. To obtain this condition, considerable positive bias is required.

The gain of the system is the ratio of the output voltage change to the corresponding input voltage change.

The output voltage change is given by the change in anode current \times load resistance. Thus in Fig. 4, taking the 20,000 ohms line, a change in input volts may be AC (138 - 118 = 20 volts). The corresponding anode current change is BC (6.95 - 6 = .95 milliams). Change in output volts is therefore $.95 \times 20,000 \times \frac{1}{1,000} = 19$ volts.

Gain is therefore $19/20$ or .95. The following table summarises the various features of the three curves shown in Fig. 4.

Z =		5,000 ohms.	20,000 ohms.	50,000 ohms.
As Amplifier	Max. input swing =	Volts. ± 41.5	Volts. ± 74.5	Volts. ± 92
	Positive bias =	32.5	65.5	83
As Detector	Negative bias to cut-off =	-9.0	-9.0	-9.0
	Gain =	.9	.95	.96

The high input voltages are worthy of note and this feature will be appreciated from the diagrams in the May BULLETIN.

Fig. 5 is the dynamic characteristic measured from the writer's receiver, by applying known positive and negative input voltages and noting the corresponding anode current. By applying the method given above, the gain of this actual detector circuit is .85.

The infinite impedance detector has the advantage of 100 per cent. negative feedback and is therefore free from distortion. Moreover its operation is not unduly disturbed by operating voltage variations.

Since the grid-cathode capacity is no longer in parallel with the input circuit, the input impedance is great compared with conventional arrangements, and if the inter-electrode impedances are neglected, this input impedance can be shown to approach infinity as the load impedance is increased.

This may be deduced from the fact that very nearly equal and opposite voltages are applied across the grid-cathode path with the result that the resultant current would be very small.

Under practical operating conditions the input impedance is of a sufficiently high value to obviate loading the input circuit so that every advantage may be taken of a high "Q" tuned circuit and its inherently good selectivity.

Advantages of Infinite Impedance Detector

The advantages of the infinite impedance detector may be summarised as follows:—

- (1) High input impedance.
- (2) Low output impedance.
- (3) Good rectifying characteristics.
- (4) Freedom from distortion.
- (5) Ability to handle large input voltages.
- (6) Aerial circuit or output of previous stage is not loaded, resulting in good selectivity.
- (7) High signal-to-noise ratio.

The last point is very evident in the writer's receiver, the circuit of which is given in Fig. 6. There is practically no background, the quality is most satisfactory and in spite of there being only one tuned circuit, selectivity is reasonably good.

This receiver was designed for the medium broadcast wave-lengths, but since there is no signal frequency amplification or regeneration, the range of reception is limited. There seems to be no reason, however, why this system should not be extended to include a regenerative signal frequency amplifier.

Experiments have also been carried out with a view to obtaining regeneration so as to increase the sensitivity of the circuit—particularly for the higher frequencies—but only moderate success has been realised.

To obtain adequate output, two A.F. stages are used.

[To be continued.]

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MORE ABOUT SUPERHETS— DOUBLE AND OTHERWISE

By "THE WORKSHOP MAN"

FOLLOWING the publication of his article in the June, 1942 issue of *THE BULLETIN*, the author was gratified to receive several letters on the subject of double superhets. Some were from members who had receivers of this type already working, others had reached the "hardware stage" as one put it, while some had interesting ideas to put forward, although they had had no opportunity of trying them out in practical form.

In the course of correspondence with some of these interested—and interesting—parties, many points concerning the design of receivers generally came up for discussion, and the writer ventures to think that a precis of, and some notes on, these opinions might be of interest to other readers of this journal.

The Double Superhet

Firstly, let us deal with items in connection with the double superhet—the original theme of the article in question.

Mr. Felix, BR84318, of Norwood, is one of those with a receiver of this type actually completed and working, and he is now busily engaged, when time permits, in extracting sundry snags therefrom.

He uses 1,600 kc/s. in the first, and 110 kc/s. in the second I.F. amplifier, and favours plug-in coils in the S.F. circuits. The valve line-up is 6SK7 R.F., 6L7 first mixer, 6SJ7 first R.F.O., 6SK7 1,600 kc/s. I.F., X6I second frequency changer, 6SK7 110 kc/s. I.F., 6C8 detector and first A.F. stage, and 6L6 output. There is also a 6H6 double-diode, one section of which is used for A.V.C. while it is intended that the remaining diode in this valve should be used for noise limiting. A 6J7 will be used as a B.F.O., but it is not yet decided whether this stage will operate at 110 kc/s. or at 1,600 kc/s. to avoid the possibility of whistles resulting from the B.F.O. harmonics.

One difficulty Mr. Felix was up against was that the action of the A.V.C. on the first I.F. amplifier was producing "floppy" tuning. This looks as if alteration of grid bias was causing a shift in the frequency of the first R.F.O. valve, but he did not mention whether A.V.C. was applied to the mixer as well as to the following stage. If this is the case, it would certainly be a likely cause of the trouble; mixer stages are best left uncontrolled. If the I.F. valve only is controlled, however, it would appear that the alteration of its impedance, consequent upon the varying grid bias, is being reflected back *via* the anode circuit of the mixer into the oscillator stage. As this latter is a separate valve, it seems hardly likely unless the screening between stages, or the decoupling, is inadequate, and the whole I.F. amplifier has a tendency towards instability. Attention to these points should clear up the trouble. In a set possessing as much potential gain and selectivity as a D.S.H., too much care cannot be taken in matters of layout, wiring, screening, and decoupling of all circuits, and time taken in this respect, although adding much to that devoted to the construction of the receiver, will be more than repaid.

Another fault described by Mr. Felix and one which the author finds somewhat baffling, concerns the signal/noise ratio of the receiver which remains roughly the same irrespective of the strength of the signal being received. In other words, the noise increases with an increase in signal strength. A logical explanation of this effect escapes us at present, and readers' comments would be welcomed.

Commercial Double Superhets

Just after writing the D.S.H. article, the author was fortunate in being able to inspect and test an all-British commercial receiver embodying this design, which provided conclusive proof of what results can be obtained with this type of circuit when allied to superlative technical design, and attention to even the smallest, and as some would perhaps think, unimportant details. It is unfortunate that full details of this set cannot at present be given, but evidence that it represents a great step forward in receiver design and performance will be furnished by the statement that the gain in its single R.F. stage—achieved with perfect stability over a very extensive frequency range—is well above that of any receiver with two R.F. stages so far tried against it. The signal/noise ratio, for an input of $\frac{1}{2}$ μ v. exceeds 20 db. over the frequency range, and "crystal gate" selectivity is achieved on C.W. by the use of tuned circuits alone. Moreover, there was only one detectable whistle throughout the whole of the frequency range, despite the fact that the second I.F. amplifier and the B.F.O. were operating on a frequency in the neighbourhood of 100 kc/s. In order to achieve this result, the operator is not expected to perform a cinema-organist act upon a panel covered in knobs and dials; in fact the controls are fewer than are found on many communication receivers on the market, which have not a hope of providing a comparable performance.

There is no "secret circuit" bogey about this piece of apparatus; just the results legitimately to be expected when a sound technician uses his knowledge of receiver theory and applies it with care and attention to detail, not forgetting that last, and most important link in the chain, the man who has to use it.

The Importance of Signal/Noise Ratio

One point of importance noted during this test was the fact that the signal/noise ratio is to all intents and purposes fixed by the time the signal reaches the grid of the first mixer. This proves that the provision of "good" R.F. circuits (which includes good coils on low-loss formers, high quality valve holders and R.F. insulation generally, as well as attention to all contacts carrying R.F.), is more productive of efficient results than mere gain, by the addition of R.F. stages, can ever be.

Some time ago the writer had to endeavour to receive some extremely faint "fone" (strange how this good old ham term fails to ring the bell in the Services—R/T to you!) which was very nearly down in the background level. Several fairly good communications receivers, hotted up to the limit, were tried, but there was little to choose between them; finally a two-stage preselector was installed to help things along a bit. The voltage gain, under the influence of no less than four tuned R.F. stages was, as might be expected, considerable, but the signal/noise ratio had deteriorated to such an extent that the wanted signal was even further down in the background, and quite unreadable—a most convincing demonstration of R.F. gain being no substitute for a good signal/noise ratio. The preselector in this case had very good valves, but the coils were of only average commercial quality.

We have memories of testing a well-known preselector on the 1.7 Mc/s. band before the war,

connected in front of the station T.R.F. receiver. It was on the occasion of one of the Transatlantic tests, and it was hoped that with all that additional R.F. gain many more W's than usual would be heard. Certainly, those signals which were already audible were increased in strength, but the readability value of the really weak ones was less, in fact not one signal was received which was not there on the unaided T.R.F. set. Attention to coil design and construction, and the use of really good formers (preferably made of polystyrene material), is certainly the first step on the road to an improved ratio of signal to noise, and the reception of elusive DX signals. Very seldom can an inferior performance be attributed to sheer lack of gain.

Band Spread

Having digressed somewhat from the matter under discussion, we will now return to deal with some interesting observations made by Mr. H. Whalley, G2HW, of Darwin in letters to the writer. 2HW proves fairly conclusively that our proposed scheme for band-spread in the D.S.H., by tuning the first I.F. amplifier, would result in serious trouble from image interference. It will be recalled that it was proposed to put the second I.F. amplifier on a frequency of 100 kc/s., and that the first I.F. should be tunable over a band of 500 kc/s. (from 1.6 to 2.1 Mc/s.) while a fixed-tuned R.F.O. should be employed for each band. With this arrangement, images could be produced from signals 200 kc/s. off tune in the first I.F. amplifier, i.e. if this part of the receiver were set to 1.6 Mc/s., a signal on 1.8 Mc/s. could cause interference. Agreed, but it must not be forgotten that this is not the end of the story. The I.F. amplifier is not set to receive a transmission *picked up on the aerial* on 1.6 Mc/s., it will be amplifying some signal which has been *converted* to 1.6 Mc/s. by the first frequency changer, and the real S.F. will be on, say, the 7 Mc/s. band. Let us consider an example of such a state of affairs. The fixed R.F.O. is on 5.4 Mc/s. and the first R.F. and mixer circuits will be tuned to 7 Mc/s., thus giving the required difference of 1.6 Mc/s. for the first I.F. amplifier. In order to produce a signal at 1.8 Mc/s. the S.F. would have to be 5.4 plus 1.8, or 7.2 Mc/s., and this would have to get past no less than four tuned circuits.

As was previously stated, this arrangement for band spread has never been tried out in practice, so that 2HW may well have foreseen some snags which are at the moment not apparent to the author. We look forward to his further comments on this point.

The same correspondent also mentions that he has come across a "triple super," but gives no details. Could this be that someone has gone to the limit, and employed superhet principles to convert from the final I.F. to audio frequency and used a tuned audio amplifier? This could only be done, of course, in a receiver designed for the reception of C.W. exclusively, but there seems no reason why it should not be accomplished, although it would put a very high premium on frequency constancy throughout the receiver.

The D.S.H. on V.H.F.

Another correspondent who, for the same reasons as the author, desires to remain anonymous, puts forward some very interesting views on the subject of V.H.F. receivers operating on the D.S.H. principle. This member is a very well known amateur who has in the past contributed many excellent technical articles to THE BULLETIN, and his views are, in our opinion, well deserving of consideration.

He forwards a specification of an ambitious V.H.F. receiver employing "Acorns" in the S.F. stages

(954 R.F., 956 mixer and 955 R.F.O.), a first I.F. on 20 Mc/s., using an 1852 valve, feeding into a second frequency changer (1853 and 6C5), and a second I.F. on 1.6 Mc/s. consisting of a pair of 6SK7's coupled by iron-cored transformers with provision for variable selectivity.

Neon stabilisers of the VR150 type are suggested to minimise voltage variation in the supplies to the 955 and 6C5 oscillators' plates, and the lay-out would also include a B.F.O. stage and A.V.C.

The reason for the somewhat high first I.F. is to ensure complete second-channel rejection and to ensure that the frequency of the first R.F.O. falls well outside the band of frequencies being received. The latter consideration is most important where several receivers are to be worked in close proximity one to another as often occurs in Service use, but hardly worries the average amateur, who is generally well satisfied if he has one receiver "perking" at any time!

There is, however, another advantage in using such a high I.F., because it means that the R.F.O. can be worked at a frequency so much *below* that of the S.F. circuits, with the consequent advantages of greater stability and ease of oscillation. There is, of course, the inevitable snag, and this time it is the restriction in the frequency coverage on any given band, but as it is always difficult to maintain a constant sensitivity over a wide band, due to the large variations occurring in the L/C ratio of the tuned circuits, this might not be such a disadvantage as would appear at first sight. Constructional difficulties would be increased, owing to the necessity of more frequent coil changing, but this could be arranged on the turret system to avoid R.F. switching, which should be definitely "out" on V.H.F. receivers, anyway.

In order to simplify the S.F. circuits, it is proposed to tune the R.F.O. over one band of frequencies only, (say 10 to 20 Mc/s.), and to employ oscillator harmonics on the other bands. Our correspondent considers that a Class A-B buffer stage should be placed between the R.F.O. and the mixer in order to increase the amplitude of the harmonics, combined with the provision of additional cathode bias on the oscillator itself, which latter would be controlled by a switch operated from the coil changing mechanism. We are informed that some preliminary tests have already been carried out on frequencies up to 80 Mc/s. using the harmonics from an oscillator working in the 10 to 20 Mc/s. region, and no adverse effects were noticed.

Where we do, however, cross swords with our correspondent, is when he states that the V.H.F. communications receiver should have overall selectivity of the same order as is found on those operating in the lower frequency bands, even to the extent of a crystal filter or other device to give comparable selectivity. We agree that this is an ideal to be aimed at, but in the present state of the art it is felt that circuit and valve stability at these frequencies has not yet reached a high enough order for such selectivity to be other than an embarrassment. Drift, due to various causes, increases as the cube of the frequency, and while an unnecessarily wide acceptance band is undesirable from the point of view of the signal/noise ratio, it is felt that the overall selectivity should be chosen with this question of oscillator drift well in mind.

As to whether the additional complication of a D.S.H. is justified on V.H.F., our considered opinion is "yes," the reasons being as follows:—

- (a) A high I.F. is desirable to ensure complete second-channel rejection, and the use of an R.F.O. operating on as low a frequency as possible.

- (b) Without many tuned circuits at such a frequency, selectivity would be inadequate, and it would be simpler in the long run to obtain this selectivity at a lower frequency.
- (c) Conventional methods of variable selectivity are easier to apply at, say, 2 Mc/s. than at 20 Mc/s.

The disadvantages would seem to be:—

- (1) Less inherent gain from an amplifier on a frequency as high as 20 Mc/s. as compared with a compromise frequency such as 5 Mc/s., with a risk of introducing valve noise.
- (2) Noise introduced by the second frequency changer.
- (3) Chance of interference from harmonics of the oscillator of this stage, necessitating particularly good screening and decoupling in this section.
- (4) Possible loss of efficiency due to the use of harmonics of the R.F.O. in place of the fundamental on each band.
- (5) Restriction of frequency coverage per band when the R.F.O. is operated at a frequency lower than that of the S.F. circuits.

Objections 1 and 2 are concerned with the question of valve noise (which is a fixed quantity not dependent upon the strength of the signal being received), therefore, the higher the signal level at the point where valve noise is introduced, the less effect that noise will have on the signal. There should be a sufficient signal level at the second mixer stage to make this effect practically negligible. Objection 3 is purely a constructional matter, but will prove none the less tricky for that!

There is, without doubt, much more to be said both for and against in the matter, and it is to be hoped that our correspondent will soon be in a position to try his scheme and report upon the results. Meanwhile, the views of readers would be of interest.

V.H.F. Frequency Changers

Just prior to the war, our American contemporary, *Radio*, published a circuit employing valve types 1852 and 6C5 as a V.H.F. frequency changer, with the comment that this scheme was as much ahead of the then quite new 6K8, from the point of view of conversion efficiency, as the latter valve excelled over previous frequency changers. We are not able to lay our hands on this article at the moment, and beyond the fact that the oscillator voltage was fed into the suppressor-grid of the 1852, can recall no particular features of the circuit.

The reason for raising this point is that a rather similar frequency changer is specified for converting from 20 Mc/s. to 1.6 Mc/s. in the receiver just discussed, and we should be glad to learn whether it has been found to have particular advantages over the usual, and specialised mixer, valves at these frequencies, and also the results to be expected from such a valve combination at V.H.F.

As before, opinions and comments—adverse and otherwise—will be welcomed from members. Communications should be sent *via* the R.S.G.B.

News from SM.

From Mr. R. Robbins, G4CY, we learn that Erik Lofgren, SM4JG of Harnosand, Sweden, is fit and well. He has been anxious about the welfare of his G friends with whom he used to work. Although communication is difficult he does not wish them to think they have been forgotten. Life in Sweden is apparently much the same as usual although the main items of food are rationed. In pre-war days SM4JG and G4CY had a daily sked at 1900 GMT.

Further news from Sweden comes to hand *via* Sgt. H. G. Collard, 2CVA, who reports that SM5NM and SM7LK are in good health. They, too, wish to be remembered to old friends.

Letters to The Editor

How the Grid System is Frequency Time-Controlled

DEAR SIR,—With reference to the inquiry in the January issue from Mr. E. W. Fair regarding the control of frequency on the Grid System the following notes may be of interest:

Alternating current is generated by the windings on the generator rotor revolving in a magnetic field (although on large machines the winding is stationary and the electro-magnet revolves). It follows, therefore, that the frequency of the alternations is a function of the speed of the generator, *i.e.* if the speed is 1 per cent. low, the frequency will be 1 per cent. low and *vice versa*. If the generator is running 1 per cent. slow the frequency time will be losing 36 seconds an hour. The generator is kept running at its proper speed by adjustment of the steam admission to the turbine. This is carried out within certain limits by the centrifugal governor on the machine, but fairly frequent adjustments are necessary to the governor if the average speed is to be kept close to the proper value.

The integrated error at any moment between the frequency time and standard time is shown on a special clock in the power station. A small synchronous motor operates a revolving dial which carries round with it a hand. The position of this hand with respect to the dial is corrected to standard time every half minute by an impulse from an electric clock (not a synchronous clock, of course, but one of the Synchronome type). The angular difference between the hand and the zero mark on the dial shows the error, plus or minus, in the frequency time at any moment. Adjustments are made to the governor setting at intervals in accordance with the switchboard attendant's observations of the clock. The errors from true time can be minimised by intelligent anticipation. Thus if the load on the supply system increases, the turbine speed will fall slightly in spite of the governor, and the switchboard attendant should increase the governor setting without waiting for an indication from the clock. A dial type frequency indicator is useful in this connection and is usually provided. Automatic means for keeping the frequency time correct have been suggested, but are not in general use owing to difficulties which arise with interconnected generating stations as mentioned below.

The above remarks apply to one generating station supplying power to its own network. In the case of the grid, large numbers of generators are running in parallel, and the matter is not quite so simple. The generators (which may number hundreds, spread over the greater part of the country) are all locked together—in synchronism. Increasing the steam admission at one station will merely increase the load on that station, but will have a negligible effect on the frequency. Under these conditions concerted action is necessary by the majority of the larger stations. The direction of this concerted action is, among other things, the function of the Control rooms operating in the various Grid Regions.

Mr. Fair's mention of reactors in this connection is not understood. Reactors can take various forms, but what is generally understood by a reactor in this business, is an air-cored or iron-cored choking coil used to limit the heavy short circuit currents available on large power networks to a manageable value. These have no connection with frequency control.

Yours faithfully,

THOMAS G. WARD (2FKO).

DEAR SIR,—In the January issue of THE BULLETIN Mr. E. W. Fair asks: "How is the A.C. voltage from the Grid system, frequency time-controlled to 50 c.p.s.?" The answer, strictly speaking, is that it is not. It is merely time-checked, not controlled.

The frequency of supply is controlled by the governor of the turbo-alternator, the governor itself being subject to control, over a small range, by the engineer—usually the engineer in charge of the switchboard.

A synchronous clock, operated from the supply, is mounted alongside a high-grade mechanical clock, known as the "Master Clock." The latter is checked regularly, usually against the time signals broadcast by the B.B.C. Should the frequency of the supply not be exactly 50 c.p.s., the time indicated by the synchronous clock will gradually diverge from that shown by the "Master Clock." From this the control engineer will know that the mean frequency of the supply is incorrect—fast if the clock gains, slow if it loses—and he will regulate the governor of the turbine so as to correct the error.

Now comes the weak point of the scheme: In order to correct the clock, on which he depends for information, it is necessary to over-correct the frequency so as to recover the time lost or gained by the clock; should the frequency be, say, half a cycle slow for an hour, due, for example, to overload on the generators, it will be necessary to run with the frequency half a cycle fast for an hour, or any other frequency and time producing the same aggregate effect, in order to correct the clock.

Thus it will be seen that the mean frequency over a period is maintained at 50 c.p.s. by keeping the synchronous clock right, but the frequency at any given moment may be, and often is, somewhat different. (In bad cases the divergence may be 2 or 3 per cent.; 1 per cent. is common.)

Should Mr. Fair be thinking of using the mains for synchronising any apparatus, the only sound advice one can give him is "Don't."

Yours faithfully,

J. L. ROONEY (5395).

KHAKI AND BLUE

● During the past month several letters have come to hand from Malta. F./Lt. Laurence Turner, **3823**, whose home is in Southgate, has started a concerted drive to arouse interest in the Society, and in token thereof has already roped in five new members. L.A.C. Jackson, **5391**, now stationed at Krendi, wishes to be remembered to G3LR and 2HJN. He has met a few members at different times. Cpl. Rose, **5164**, writing from Luga gives a graphic account of life on George Cross Island during recent months. "Radio" he says "has played an important part in the defence of Malta, and when the full story is told some remarkable facts will come to light which will show how a few carried on under almost impossible conditions." At his station regular lectures are given on radio theory and maths, with the result that ham interest is being fully maintained. We hope it will soon be possible to organise a Malta Convention. Those interested should write to, or get in touch with F./Lt. L. Turner at H.Q.9, R.A.F.

● Cpl. Bartholomew, **G8CK** extends his thanks to Mr. Cook, **2006**, of Swindon, for the assistance he has rendered to the "Batchelors," including G2RD, **8JI** (now a Corporal), and 2FWL. **JI** seeks news of G5ZR whilst 2FWX would like to hear from 2DJV.

● W./O. Doug. Derry, **G8PQ**, writing from an R.A.F. station in India under date of October 20, sends greetings to all pre-war members of the R.A.F.A.R.S. He would appreciate a few lines from G2XK, **3OI**, **6AC**, **6TV**, **8DY**, **8PF**, **8PI**, **8PK**, **8OL** and any other old friends who care to write via H.Q.

● Those who remember working YIICD in the dim and distant past will be interested to learn that the operator of that station—now S./Ldr. Cornerton—is C.I. at No. 7 R.S. Another old timer Ken Racombe, **YI6KR**, **SU6KR**, etc., is a F./Lt. at No. 3 R.S. It's queer how the war has caused "DX" to change places. There are G's in W, SU, VE, YI, VK, ZE, ZL and VU, to mention only a few remote localities, whilst many hams from these countries are now "enjoying" an English winter!

● W.D. to-day must be a ham's paradise judging by the number of "full calls" serving at that station. **2CVA** reports meeting, among others, **G3BR**, **3JO**, **3UP**, **5BX**, **5QG**, **8BQ**, **8KL** and **8UY**. With such a galaxy of talent available we imagine a few meetings should be possible. **2CVA** would like to hear from any OK amateur now in Great Britain. Letters via 35 Hays Walk, Cheam, Surrey, please.

● Cpl. M. Selby, **G4LV**, now in Iraq, was pleased to receive four issues of THE BULLETIN recently. He would like to contact District 7 members as his home is in Cheam. His service address may be obtained from G8UO, 13 Chandos Street, Keighley.

● W. J. A. Anderson, **GM3TD**, is enjoying himself in ZB2, where he says fruit is plentiful and whisky sells at 10s. a bottle! Four out of their community of nine are members of R.S.G.B. He has been to several bullfights and fiestas in EA.

● Cfm. A. G. Hobson, R.E.M.E., **2AGH**, is serving on a lonely S./L. site in GW. He would like the address of 8BA who he believes is now in Africa.

● Cpl. H. J. Smith, **3044**, would like to contact any member at present at No. 2 S.T.C. Notices in regard to meetings appear regularly in the mess.

● Friends of L.A.C. Dennis Greenwood, **2BFB**, whose home is in Nelson, Lancs, will be glad to hear that he has returned to his unit in the M.E., after being wounded by cannon shell splinters last September.

● Sgt. Ernie Lawden, **G3SS**, writing from Takoradi, where he is serving with the W.A. Force, appears to be having quite a good time. "The camp is situated overlooking the sea and we spend quite a lot of our spare time bathing. We have a cinema, and tennis and football are in demand." He has recently recovered from an attack of malaria.

● A further letter from A.C.1 A. H. Bruce, **G5BB**, who is stationed in the Bahamas, brings the news that he has met Sq./Ldr. G. Howard Williams, **G3BI**, Capt. Hagen, **W5BP** and Edwin Ferguson, **VP7NR**. The latter has given 5BB an open invitation to call at any time. After one visit he left with sufficient grapefruit and freshly cut oranges to supply the needs of all his hut mates!

● Sgt. Gatland, **2FTP**, who was, until recently, at No. 3 R.S. is now at Gib. where he has met Ft./Sgt. Stanley Eyre, **2FZU**. He seeks news of Derek Wintle, **G4GG**, believed to be in the M.E.

● P./O. Jack Morris, **2DRR**, also at Gib., decided to give the lads in his section a special Christmas treat with the proceeds of

THE BULLETIN honorarium awarded to him recently by Council. Jack gave some vague details of a rather feudal system of wired wireless which is in use in Gibraltar. This consists of a central amplifier of large dimensions which feeds loud speakers all over the Rock, presumably on a rental basis. Some of the bright lads have discovered, however, that as the amplifier has a high impedance output more power can be obtained if the speech coil of individual speakers is placed directly across the line! Unfortunately when this happens others, equally bright, follow suit with the result that the line impedance eventually becomes equal to a dead short!

● A.C.1 A. J. Williamson, **2DOS**, sends greetings from Iraq to all old friends in District 10. He would appreciate a few lines from anyone who has time to write. Letters should be addressed c/o 1 Central Houses, Trethomas, Newport, Mon. He is with an R.A.F. Emergency Mobile W./T. unit.

● Cfm. W. Twigg, **4819**, records his thanks to Mr. and Mrs. Green, **G3OS**, of Gainsborough, for the many kindnesses shown to him during his spell of duty in that town.

● Sgt. Ken Peattie, **2FQG**, now with the R.A.F. at Clinton, Ontario, would like to hear from Ft./Sgt. Cameron, **2BKC**, and other old friends. Letters may be sent via H.Q. He spent a very enjoyable Christmas with friends in Toronto, but has met no G. hams to date.

● P./O. A. M. Boyce, **2CMR**, who is congratulated upon being "elevated to the peerage" wishes to be remembered to G2OI, **5YD**, **8DI** and all old friends.

● Bill Sturme, **G8KL**, now a Sergeant in the R.A.F. at W.D. seeks news of John Hogg, **G2OG**, of Dudley, and Harold Wilkes, **2CPB**, of his home town, Wolverhampton. He would also like to hear from other old friends who should write c/o 400 Newhampton Road West. He reports meeting with G5QG, **W2KSY** and **9AJQ**.

● Mr. K. Fisher, father of G. H. Fisher, **4639**, informs us that his son who is now serving with the R.E.M.E. overseas, has risen from the rank of private to staff sergeant in a matter of 12 months.

● F./O. Smith, **G5VZ**, now at A.M.W.D., H.Q. R.A.F. M.E. (S./241) reports meeting G6KM shortly after his arrival. He has also had a phone chat with G5QY. He wishes to be remembered to all old friends and would like to hear from those who have time to write.

● The news that Lt. Col. T. C. Whimster, **G8UJ** is safe, although a prisoner of war in Japanese hands, will be received with relief by his many friends. Tom was taken prisoner in Malaya where he was serving with the R.A.O.C. We hope to send him P.O.W. Fund parcels as soon as arrangements can be made through the Red Cross.

● "Early Birds" will be interested to learn that Cpl. Hammond, **G4NL**, Sgts. Coupland, **2BQC**, Wynn, **G8TB** and Rayner, **6FZ**, are still serving together at W.W. and that Cpl. Stuttard, **2MB** is stationed nearby. **2BQC**, who sends this news reports having met Jim Pollard, **3IY**, Cpl. Coleman and Sgt. Bayliss, during recent weeks.

● Following an adventurous spell of duty in the Middle East, Tel. C. W. Plimmer, **2786**, recently returned to G. on short leave. In a letter to H.Q. he asks that his thanks be conveyed to Frank Pettitt, **SU18G** and his wife for the hospitality extended to him after his ship had been mined in Tobruk harbour. Whilst abroad he visited Benghazi and Aden, but except for a personal QSO with L.A.C. Newland, **G3VW**, at Aden, he met no other amateur. Having operated a mobile W./T. station in the desert, Plimmer knows something of the difficulties facing the "land lubbers." To them he sends greetings and an expression of sympathy!

● In an air mail letter to G8QH (A.R. for South West London) Cpl. Harris, **2FPY**, reports great keenness on the part of the local ham fraternity. As his name appears in the list of those present at the Cairo "do" on December 19, we have no doubt he "whipped" up support from his section. He thanks 'QH for news concerning District 13 and expresses the hope that those on home stations will drop him a line. His address can be obtained from Mr. Simmonds.

Silent Keys

We announce with regret that the following members have been killed on active service:—

Sgt. Pilot R. T. Batches, R.C.A.F., **GM5GK**, of Edinburgh. Killed on returning from an operational flight over Germany.

A.C.2 D. D. Brotherick, R.A.F., **5446**, of S. Ruislip, Middx.

L.A.C. B. J. Thrupp, R.A.F.V.R., **4899**, of Leicester. Killed in a flying accident on December 30, 1942.

Ft./Lt. Harry Groves, R.A.F., **2BGN** and 2/Lt. T. P. Douglas, Royal Signals, **GM3BA**, have been reported missing from Far East operations.

ARE YOU AT

No. 1 R.S. or No. 8 R.S. ?

If so, you are invited to attend Meetings in Hut 165 (No. 1 R.S.). Details from Cpl. Chadwick (G8ON), Cpls.' Club, East Camp.

MEMBERS ON ACTIVE SERVICE

Forty-first List

WE publish below our forty-first list of members on Active Service. Additional details and corrections should be advised to Headquarters as early as possible. The present list contains information received up to January 31, 1943.

Rank and Name	Regiment or Branch of Service	Pre-war Call or B.R.S.
A.C.1 A. G. Allen	R.A.F.	5787
L.A.C. H. Alletson	"	5824
Cpl. J. W. Baldie	R.N.	5760
L.A.C. J. J. Ball	R.A.F.	2DKX
Cpl. G. Barnes	"	5813
Tel. W. H. Beacham	R.N.V.W.R.	5889
F./Lt. H. Bean	R.A.F.	5816
L.A.C. R. J. Berridge	"	5881
Sgt. J. Berry	R.E.M.E.	4744
A.C.1 I. J. Birch	R.A.F.	5817
Cfn. T. Blezard	R.E.M.E.	5809
A.C. W. Bolt	R.A.F.	5761
A.C. E. W. Bonson	"	4702
Cpl. J. A. Broderick	"	4709
Cpl. H. D. Butcher	"	4036
L.A.C. J. Cannon	"	5799
A./P.O. J. R. Cartwright	"	5807
Cpl. C. W. G. Clements	"	5779
L.A.C. L. C. I. Cole	"	5920
L.A.C. F. J. Collier	"	2HLJ
L.A.C. G. S. Constable	"	3522
A.C.1 G. A. Coveney	"	5885
S./O. M. E. Cummings	W.A.A.F.	5777
F./Lt. L. Cushion	R.A.F.	5902
Cpl. A. S. Davey	R. Sigs.	2CIX
Cpl. E. F. Dawson	R.A.F.	5781
A.C.1 R. R. Deacon	"	5790
Cpl. C. W. Deadman	"	5765
L./Sgt. J. A. C. Dean	R.E.M.E.	5811
O./Cadet A. Dempsey	R. Sigs.	5778
Pte. D. P. Doo	R.A.P.C.	5856
Ldg. Radio Mech. B. Freyne	F.A.A.	5810
A./P.O. A. E. Game	R.A.F.	5890
A.C.1 C. A. Garland	"	3991
A.C.2 D. L. H. Gauntlett	"	5795
A.C. S. G. Gibson	"	5812
Cfn. G. H. Gledhill	R.E.M.E.	5804
Cpl. G. N. Glover	R. Sigs.	2741
Sig. R. J. Glover	"	5255
P./O. N. K. Green	R.A.F.	5794
Sgt. Obsr. W. Greenock	"	2BCM
A.C.1 A. N. Grove	"	5767
A.C.1 J. A. Edwards	"	5749
Sig. J. A. Edwards	R. Sigs.	G3SR
Cpl. J. C. Edwards	R.A.F.	4676
A.C.2 C. G. Ellis	"	2DHH
Ldg. Radio Mech. R. E. J. Hallidaye	R.N.	5916
2nd/Lt. K. F. Halnan	R. Sigs.	5921
Sgt. E. M. Harborne	R.A.F.	5782
Cpl. F. H. Hardingham	R. Sigs.	2HNT
F./Sgt. E. A. Hay	R.A.F.	4026
L./Bdr. G. M. E. Higgins	R.A.F.	5805
A.C.1 S. Hill	R.A.F.	5897
A.C.2 F. R. Horton	"	5789
Cpl. R. P. Hobden	"	5650
Sig. S. Ince	R. Sigs.	G6LC
Sig. A. Irwin	R. Sigs.	G15TK
Cpl. H. F. Knott	R.A.M.C.	G3CU
P./O. A. Laws	R.A.F.	5873
L.A.C. T. C. Tyrrell-Lewis	"	3169
F./Sgt. E. C. Lills	"	5912
Cpl. A. B. Marsh	"	5762
A.C.1 P. N. Martin	"	5780
Ldg. Tel. R. A. Mawdsley	R.N.	5877
A.C.1 F. W. Miller	R.A.F.	5879
Cpl. H. H. Mills	"	5796
L.A.C. C. A. Moss	"	5911
A.C.2 A. MacDonald	"	5907
Sgt. D. McDonald	"	4877
Armt. Q.M.S. G. W. McDonald	R.E.M.E.	GM2OX
A.C.2 J. McLaughlin	R.A.F.	5808
Cpl. A. Orman	"	5773
Pte. J. Q. Owen	R.A.O.C.	5886
Warrant Tel. W. J. Page	R.N.	G3PA
Sig. J. V. Parsons	R. Sigs.	G5QP
Pte. J. Patterson	"	3497
Ldg. Tel. R. A. P. Patterson	R.N.V.R.	2CCC
Cpl. W. H. Peck	R. Sigs.	G2ZZ
Cpl. G. Proctor	"	GM8SQ
Sig. G. W. Pryor	"	G3YX
Cpl. E. F. Pullen	R.A.F.	4631
Sig. T. Purves	R. Sigs.	2CGY
A.C.2 E. Randall	R.A.F.	5859
L./Cpl. R. Ritchie	R.E.M.E.	5871
Sig. W. H. Robertson	R. Sigs.	G6WR
A.C.2 R. L. Rutherford	R.A.F.	5918
P./O. A. C. W. Sanne	"	5786

Rank and Name	Regiment or Branch of Service	Pre-war Call or B.R.S.
P.O. Tel. J. M. Sharkey	R.N.	5909
A.C.2 J. E. Sidgwick	R.A.F.	5899
Cpl. J. Simpson	"	5783
L./Cpl. E. G. Stares	R. Sig.	G8TV
L.A.C. C. A. Steer	R.A.F.	5869
Cpl. A. H. Steffen	"	5814
L.A.C. E. J. Storey	"	5750
Cpl. W. Swanson	"	5801
L.A.C. J. G. Taylor	"	5862
Cfn. L. Taylor	R.E.M.E.	4683
L.A.C. J. Thomason	R.A.F.	4711
L.A.C. J. D. Trelease	"	5815
L./Sgt. J. A. J. Turrell	"	5771
L.A.C. J. C. Upton	R.A.F.	5776
Cfn. J. Verley	R.E.M.E.	5802
Cpl. J. H. Walker	R.A.F.	5870
P./O. D. A. Webb	"	5784
Cfn. D. A. Wheeler	R.E.M.E.	5914
Lieut. A. White, B.Sc.	R.N.V.R.	5800
P.O. J. L. Whittaker	R.N.	1933
Sgt. G. Wildig	R.A.F.	5919
A.C.1 W. H. E. Wilgoss	"	5830
Radio Mech. E. Williams	R.A.O.C.	5883
Cpl. E. J. Williams	R.A.F.	2AKY
A.C. J. F. Williams	"	4667
Ldg. Tel. D. R. Winter	R.N.	5756
Cpl. H. J. Withers	R. Sigs.	G6XA
A.C.1 E. W. Woodroffe	R.A.F.	5906
L./Cpl. G. A. Woods	R. Sigs.	5825
Cpl. D. G. Wright	R.E.M.E.	5806
Capt. J. A. Yearsley	R. Sigs.	5803

Prisoners of War Fund

A BULLETIN OFFER.—W./Cmdr. R. M. Bangay, G3DW, has kindly donated to the Society the following back issues of the T. & R. BULLETIN: vol. XII, nos. 10, 11 and 12; vol. XIII, complete; vol. XVI, nos. 1 and 2, and these will be sold to the member who submits the highest bid to Headquarters by February 28. The proceeds of the sale will be credited to the Prisoners of War Fund.

BOOKS.—Mr. C. H. L. Edwards, G8TL, acknowledges, with thanks, receipt of parcels of books from Messrs. Cleland, G2CN, and H. Tee. Further gifts of books will be appreciated. Parcels should be addressed to Mr. Edwards at "Speedways," St. Bartholomews Lane, Sudbury, Suffolk.

PARCELS.—Parcels were sent in December to 21 members and four non members.

THANKS.—The General Secretary acknowledges with thanks on behalf of Council, receipt of donations from:—W. Badcock, 2BAJ, 5s.; W. P. Stevens, 4022, 5s.; E. R. Westlake, G6KR, 5s.; Coventry A.R.S., £2; H. E. Clarke, 4474, 5s.; R. W. Harris, 4029, 5s.; O. C. Hill, 4044, 10s.; C. R. Beaven, 2BVD, £3 3s.; G8CY and Family, 10s. 6d.; J. D. Kingston, G3VK, 6s.; T. R. Theakston, 2DBK, 10s.; G. E. Blow (Father of Sig. Blow, P.O.W.) £3; R. Heybyrne, 3538 (S.B.A.R.S.), 12s. 6d.; Sigs. Maint. Personnel, per G8J, £1; J. Wilson, GM6XI, 10s.; D. G. Bagg, VP4TO, 2s. 6d.; T. J. S. Cole, G3YU, £1; Anon., 11s. 6d.; Anon., 5s.; P. C. W. Green, 3753, 15s.; C. T. Barrington, G6LY, 15s.; R. Bradley, 4209, 7s. 6d.; R. M. Bangay, G3DW, £2; H. E. Gill, G8KO, 15s.; S. Ince, G6LC, 5s.; District 5 per G6RB, £2 15s.; District 13 per G8ST, 8s. 6d. Receipts to date, £725 8s. 2d. Expenditure to date, £218 12s. 8d. Balance in hand as at January 31st, 1943, £506 15s. 6d.

Congrats

● To Douglas Johnson, G6DW, on his promotion to Group Captain. He is one of the first members of the Society to reach this high rank from a civilian start in 1939.

● Also to Viscount Carlou, G6XX, on his promotion to the rank of Air Commodore. He is now Air Attache to Brazil.

● To Sgt. R. H. Hayward, 4688, on his recent marriage. We understand his wife is interested in amateur radio and hopes to become a member at a later date.

● Also to Cpl. L. G. Blunden, 2CNO, who was married at Newhaven on January 9 to Miss Joan Coleman. The Rev. Sydney Newby, G8CP, officiated.

● To Sgt. Sturmy, G8KL, whose wife presented him with a daughter—Valerie Janet—last October.

● To Cpl. "Bill" Bartholomew, G8CK, of Watford, now proud father of a bouncing baby boy born on January 25. Bill can no longer call himself a "Bachelor"!

● To Captain Dennis Westwood, Royal Signals, G8WF, on his marriage to Miss Madeleine Greveson. This is the second time that the Misses Greveson have chosen a husband from the "ham" fraternity as Madeleine's sister Evelyn is the wife of George Webster, G2WX. In pre-war days G2WX and G8WF were well known members of the Barnsley group. Capt. Westwood is at present employed on the Instructional Staff of an O.C.T.U. somewhere in the North.

● To Mr. F. T. Wilson, G2XX, who was married at Christmas. He is now at T.R.E.

Cairo Christmas Convention

Although the official account of the Cairo Convention held at the Britannia Restaurant on December 19, had not reached us up to the time of going to press, several members have written by the airmail and air mail services to report upon its success.

The party included ZL's, SU's, W's, G's and VE's—one of the latter, who signed the register with a VE9 call, "foxed" most of the company. There were present Wing Commanders and A.C.I's, Majors and Signalmen, Americans in civvies and in uniform. They wore battledress, "best blue" and khaki.

Altogether an attendance of over 50 was present, including the following: G2FX, 2YK, 3AM, HJ, NZ, 4AH, HK, JY, 5HI, OI, QY, UH, VU, 6CW, GS, LK, IX, 8DA, KW, GW5UX, GM8RJ, 8BS, 2CIB, DTQ, FDT, FPI, FTY, VE1CNE, 3AKX, AKY, 3ZA, 4AVE, W4HAT, 5PJ, 8TTP, SU1AX, 1WM, ZL2IO, TL, BRS4905, 5209.

A collection, amounting to £7 12s. 0d., was made on behalf of the R.S.G.B., P.O.W. Fund.

Much credit for the success of this venture is due to Mr. W. E. Marsh, SU1WM and Mr. A. Hockstein, SU1AX, who were responsible for the arrangements. That their efforts were warmly appreciated is made evident from the letters received at Headquarters. Thanks Bill and Alex.

We understand that another meeting has been arranged to take place during the summer.

British Sound Recording Association

Contrary to ill-informed gossip the B.S.R.A. is still in existence, but under present conditions is not able to arrange meetings and visits, although members keep in touch by correspondence and personal contacts. The Association's Information Bureau still collects details of recording developments and new apparatus (much of which cannot be published yet), and endeavours to answer problems on sound recording by all known systems.

The B.S.R.A. would particularly like to hear from American radio amateurs now in this country, having knowledge of disc sound recording. Communications should be addressed to the Hon. Technical Secretary, Mr. D. W. Aldous (BRS1006), "Strathdee," Studley Road, Torquay, and, if from a non-member, please enclose postage.

Madagascar Calling

An interesting letter was received at Headquarters last month from Mr. F. Paul, FB8AB, of Tananarive, Madagascar. The body of the letter, written on August 25, 1939, referred to the fact that as FB8AB had just received the July 1939 issue of *Radio R.E.F.* containing the rules for our B.E.R.T.A. and W.B.E. certificates, he would like to submit the necessary cards. A list of countries and stations worked was included in which we note such well-known calls as G3DO, G15UR, GM6RG and E16F. At the foot of the letter FB8AB wrote, on October 20, 1942, "Delayed posting through outbreak of war."

Needless to say Headquarters welcomed this letter and although Mr. Paul has been advised to defer his claim, owing to the risk of losing his valued collection of cards in transport to England for checking, it is hoped that he will be among the first to claim our certificates after the war.

Incidentally, the rules governing the issue of post-war B.E.R.T.A., H.B.E., and W.B.E. certificates may require some modification if the United Nations finish off the Axis Powers as successfully as we all hope!

Eric Megaw Honoured

Hearty congratulations are offered to Mr. E. C. S. Megaw, scientific officer in the G.E.C. Research Laboratories, who has been appointed a Member of the Order of the British Empire. Mr. Megaw has delivered several important lectures, on microwave technique, to the Society and has contributed to this Journal on several occasions. He operated an amateur station for many years under the call G16MU and has been a member since 1926.

2CVA + 2ATB = 1GTX

The news that Sergeant Harold Collard, 2CVA and Miss Denise Bullough, 2ATB, were married early last month will be warmly received by their many friends at home and abroad. Denise was in the A.T.S. until temporary ill health caused her to resign. Harold is in the R.A.F. and stationed at W.D. We offer them our heartiest congratulations and trust that it will not be long before they are operating a joint station under a G call. They are living at 35 Hays Walk, Cheam, Surrey.

Congrats

To Mr. and Mrs. Gordon Douglas Bagg, VP4TO, ex-G6BD, on the safe arrival of a son and heir on December 2. Douglas who is Technical Assistant to the Manager of the By-Products Department, Trinidad Leaseholds Ltd., Pointe-a-Pierre, was resident in Tonbridge prior to leaving for Trinidad. He sends greetings to all old friends.

To Mr. A. E. Livesey, G6LI, of Ludborough, Lincs., whose wife recently presented him with a son and heir. G6LI was for several years Representative for District 17 and prior to the war he made many important technical contributions to this Journal. He is now with the Western Electric Co.

Alive and Kicking

We are happy to announce that L.A.C. A. M. Fyfe, BRS4230, of Dumbarton is alive and well, in spite of the announcement to the contrary in our last issue. The mistake occurred because Mr. Fyfe changed his address without notifying H.Q. The new occupant of his old home, knowing that Mr. Fyfe, senior, had died recently, returned the December BULLETIN to H.Q. marked "Deceased."

Moral. Advise the Society promptly when you change your permanent address.

The Flat Footed Brigade

Bob Holden, G15HU, energetic Hon. Secretary of the Y.M.C.A. Radio Club, Belfast, and a member of the Royal Ulster Constabulary thinks it would be of interest to compile a list of members who are serving in the regular, special, or war reserve police forces. He mentions that W. C. F. Taylor, G13KV, is also in the R.U.C., and that George Brown, G5BJ, is an Inspector in the City of Birmingham Police Force. W. D. Gilmour, G2VB, of West Norwood, is in the Metropolitan Police Force. Other names please.

Prisoners of War

The following is an up-to-date list of Society members who are receiving parcels from our P.O.W. Fund:

In Germany

W./O. G. D. Barry	R.A.F.
Tel. P. B. Briscoombe	R.N.
Cpl. D. W. Carr	R.A.O.C.
P.O. Nav. Airman H. G. Cunningham	R.N.(F.A.A.)
2nd/Lieut. D. L. Flower	R. Sigs.
2nd/Lieut. R. A. Frost	R.A.
Radio Officer G. W. Hindle	M.N.
Lieut. A. W. Lister	R.A.
Sig. F. E. Marshall	R. Sigs.
2nd/Lieut. M. I. Quartermaine	R. Sigs.
L.A.C. A. R. Richardson	R.A.F.
Capt. E. S. Shackleton	R. Sigs.
Senr. Radio Officer A. C. Webb	M.N.

In Poland

F./Lt. F. H. Babcock	R.A.F.
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In Italy

2nd/Lieut. D. G. Blair	R.A.C.
A.C.I M. Campbell	R.A.A.F.
Sig. R. M. Garrett	R. Sigs.
Sig. J. B. Kay	Middx.
		Yeomanry
Lieut. D. S. Matthey	R.A.
Sig. M. R. McArthur	R. Sigs.
L.Cpl. K. N. Smith	R. Sigs.
Capt. J. E. R. Wood	R. Sigs.

The following non-members are also receiving parcels:

In Germany

Sig. W. E. Caughney	R. Sigs.
2nd/Lieut. S. Heath	R. Sigs.
*Sgt. W. Spink	—
*Chief Radio Officer F. F. Warner	M.N.
*Member prior to the war.		

The following members are held prisoner by the Japanese in Malaya:

In Japanese hands

A.C.I D. E. Blow	R.A.F.
Lt./Col. T. C. Whimster	R.A.O.C.
Parcels are not yet permitted.		

73.

G2GZ (R.A.), to G2JB, MI, 3CI, ST, 5PY, 6CS and 8TN.
G3SS (R.A.F. West Africa), to G2LB, PW, 3AG, PR, 4MN, 5BJLK, 6DL, 8ND, TH, VC, and WY.

G4IO (R.A.F.), to G2LF, 3OQ, UG, WC, 4GI, PN, 5RP, 8FC, and GW3CF.

G8KL (R.A.F., W.D.), to G2NO, 3DV, HV, PH, 6FK, 8PR, RF, SR and SZ.

G13VQ (Merchant Navy), to SU1AX, 1SG, 1RD, G8LO, G13ZX, 2DTQ and E18N.

G15TK (Belfast), to G2SO, 3XT, 5UA, 6TQ, 8CJ, CK, PI, UK, GM5KF, and 2FTY.

GM2NQ, to GM6KZ, 5HL, 2FAO, 2CPT, BRS209 and 2757.

2BQC and G8TB (R.A.F.), to G2UK, 3HG, 6GH, 8BQ, 2DCG, 2FTI and 2HBN.

2DOS (R.A.F.), to G2JL, GW2BG, 4KQ, 5BI, 8NP and WU.

2FTP (R.A.F., Gib.), to G2FZ, 3ZA, 4AI, 4AY, 4GG, GW2VZ, 2BFC and 2HFU.

4700I (Manchester), to G4BM, QC, 2FIM, 1060 and 5597.

BRITISH ISLES NOTES AND NEWS

DISTRICT 1 (North Western)

D.R.: H. W. Stacey (G6CX), "Sandless," Eddisbury Road, West Kirby, Cheshire. Hoylake 337.

Bolton.—2DVQ reports that five local members and three visitors attended the meeting held at his home on January 10. The visitors were 3594, 4790 and Sigm. Carter, the latter a prospective member; 3594 is the latest addition to the town's ham population. 2XU has left Bolton for the South, after a stay of more than a year.

Burnley.—The D.R. is pleased to have received a letter from Sgt. H. Tee, G8UA, who thinks it time that some of the local members sent in a few notes, nothing having appeared for more than a year. He would like to hear from 31Y, 5ZN and others. 8UA is located near London where he has met 4362 (Sale). His home address is 104 Rectory Road, Burnley.

No other reports are to hand but 4588, now stationed at Stockport for radio training, would be glad to meet local members. The D.R. will forward his address on application. G6CX.

DISTRICT 2 (North Eastern)

D.R.: C. A. Sharp (G6KU), 316, Poplar Grove, Gt. Horton, Bradford. Bfd. 10772. Scribe: H. Beadle (G8UO), 13, Chandos St., Keighley.

Members living in or near to the towns listed are asked to note the address of their acting T.R.

Huddersfield.—BR54976, 5 Birkby Lodge Road, Birkby.

Leeds.—BRS.2317, 4 Stratford Street.

Morley.—G5YV, 8 Ashfield Avenue.

Sheffield.—G2LT, 11a Welwyn Close, Intake.

Local members are requested to contact their representative with a view to arranging meetings, etc.

2317 is a full time member of the N.F.S.; 4065 is with the R.A.F. at Torquay. 2VC and 5MW hold commissioned rank with the A.T.C. 6XT, is a Corporal with the R.A.F., 6QO and 5YV are still following their peace-time occupations. 5CX, an engineer with the B.B.C., still finds time for listening. He has constructed a valve voltmeter and capacity bridge. 4224 has rebuilt his receiver. 3HA is with the R.A.F. in North Africa. 1151 is spending a little time on a 1-v-1 for medium waves. 4819 is with H.M. Forces and has made pleasant contact with 3OS and YF. 8TF has been experimenting with amplifiers and is contemplating building a communication receiver. 4CL is busy with a receiver for the U.H.F. and hopes it will work on 112 Mc/s. 2AGH recently took unto himself a wife. (Congrats. to you both.) He would be pleased to meet members in the Cardiff/Bridgend area. 3VG is with the R.A.F. in Middlesex. 4OY is also with the R.A.F. and is a P.O. 2BOJ reports active. 2AND, R. Sigs. is at present taking a course in Yorkshire. 5603 is doing radio with the Navy whilst 4GJ is a civilian wireless op. with the R.A.F. in the Midlands; 4976 sends 73 to 3VP. 8IC, 3XX and 6BX are on work of National importance but 6BX has found time to build a CRO. 8IC reports that 4OB, 3VG and 8GA are all with the R.A.F.

G6PL, who is with the A.T.C., reports that 8WP and 8NU are in the R.A.F. 4849 also with the R.A.F., reports meeting hams from W, VE and ZL at his station. 2QM, now Lieut. R.N.V.R., says he has improved his knowledge of aërials and experienced the vagaries of radio communication from the poles to the tropics. 3NJ has been discharged from the Navy and has returned to his old job. 2VO is shortly making a commission in the Army Dental Corps. 8UO was pleased to receive a visit from 4412 and wife. 2LT recently met 2JL. 2DNX is busy with talkie apparatus. 3789 of Bournemouth and now with the R.A.F. in Sheffield recently met 8IO and 2LT. We welcome a new member in 5757. Two letter budgets are now going round the district.

Offers from members in other towns not listed above who are willing to act as T.R.'s will be welcomed by the D.R. who will be "At Home" on February 24 at 7 p.m. All welcome. G8UO.

DISTRICT 3 (West Midlands)

D.R.: V. M. Desmond (G5VM), The Chestnuts, Gilbert's End, Worcs. Scribe: E. J. Wilson (2FDR), 48 Westbourne Road, Olton, Birmingham, 27.

Birmingham.—At a meeting of M.A.R.S., held on January 10, the Naylor-Strong Cup was presented to E. J. Wilson for the best lecture of the year. After discussion, it was decided, in view of the traffic curfew, to postpone meetings indefinitely.

R. Brodby, 4209, has forwarded 7s. 6d. for the Prisoner of War Fund collected from the lads around Redditch.

A letter has been received from T. L. Stevens, G3XV, of Shropshire, who has been invalided out of the Navy. Members in this area still meet for chats on short-wave listening. 2FDR.

DISTRICT 4 (East Midlands)

Deputy D.R.: W. M. Vendy (G6VD), 9 Cecilia Road, Clarendon Park, Leicester.

In an airgraph from the M.E., 2DTQ (R.A.F.) reports that five members from District 4 attended the Cairo conventionette in December. Future District meetings will be listed in "Forthcoming Events."

Leicester.—A little more support was given to the last meeting and some interesting discussions ensued. 2RI (now F./O.) has

been posted to a station in the N.E. Midlands and only just outside the district. 8LD is back in Leicester. 4BJ is now in India.

Nottingham.—The last meeting was well supported by members of the University Radio Society who are now co-operating with local R.S.G.B. members, to the mutual benefit of both parties. Members are asked to note a change in the time of meetings. Will new members whose names only are known, please make an effort to support these functions?

Mansfield.—G8HX (now Sgt.) met several of the "locals" when on leave. G6VD.

DISTRICT 5 (Western)

D.R.: R. A. Bartlett (G6RB), 31, King's Drive, Bishopston, Bristol. Bristol 46960.

Bristol.—Although attendance at the meeting held on January 24, showed some improvement, we hope to see many more at the next meeting. A welcome was given to 5802 now stationed in the locality. A sale of apparatus donated by G6BY, together with the usual collection, realised £2 15s. for the P.O.W. fund. The D.R. was requested to write to G5JU on behalf of the District congratulating him on his "mention." A letter is to hand from G2IK now in the R.A.F. The next meeting will be held on February 21, 3 p.m., at 17 Colston Avenue, Bristol. G6RB.

DISTRICT 6 (South Western)

D.R.: W. B. Sydenham, B.Sc. (G5SY), "Sherrington," Cleveland Road, Torquay. Torquay 2097.

Torquay.—The D.R. was glad to receive a visit recently from Stan O'Hagen, G2CR. As he was chiefly interested in 28 Mc/s. propagation in pre-war days, most of the time was taken up with a discussion regarding the properties of that band. His friends in Newcastle will be glad to hear that he is fit and well.

G5SY has received messages of greeting from 5GD and 2649, as well as interesting letters from 2CWR and 3171. The former, our popular T.R. for Torquay, is now a P.O. in West Africa; 3171, who is with the P.A.I. Force, would like to hear from other members. His address can be obtained from the D.R.

North Devon.—The T.R. and several other members received from Percy Beer, G3AM, another of his, now famous, Air Mail Xmas Greetings Cards. It will be remembered that these were commented upon in THE BULLETIN last year. He is quite well and sends his 73 to all old friends. G5SY.

DISTRICT 7 (Southern)

D.R.: W. E. Russell (G5WP), "Milestones," Mayford, Woking, Surrey. Woking 1589.

Coulsdon.—In an airmail letter from Malta 2ANR reports that he has been working with G5PA and ZB1E. All three wish to be remembered to friends, old and new, in this country. 2KU recently visited BR53003. He has neither seen nor heard from any members for some time. The T.R. would like to remind members that this area joins with Croydon in the holding of local meetings. All are assured of a hearty welcome. For details see "Forthcoming Events" (via BR53003).

Bournemouth.—G8KX was a recent visitor. F./Lt. Dudley Nourse (VK2DQ) in a letter to 2HNO reports that he is enjoying life in the M.E. He sends 73 to his friends in G. (Via 2HNO).

Croydon.—The Christmas spirit must have had a bad effect on some of the members as only three attended the meeting held at 4NI's. They were 2DP, 2FWA, and 1545. SU5KW who has left the town for a spot further south in District 7 wishes to be remembered to all. 2RD is building an oscilloscope. 4NI has been on the sick list but is now better and back at work (he calls work "almost a ham's paradise"). 4314, who is a Radio Mechanic, says there is more in radio than he thought possible! 2DP finds

A LECTURE

entitled

"DIVERSITY RECEPTION"

will be delivered by

Mr. H. V. GRIFFITHS

at

The Institution of Electrical Engineers
SAVOY PLACE, VICTORIA EMBANKMENT
LONDON

On SATURDAY, FEBRUARY 27th, 1943

at 2.30 p.m.

that the latest S27's are a little better than earlier deliveries. By the time this appears in print the T.R. hopes to have the venue of future meetings settled. (Via G2DP.)

Exwell.—In anticipation of the day when C.R.T.'s are two a penny, 6SC has constructed a couple of 4000 volt transformers. 4268, who is in the R.A.C., expects to be going abroad shortly and is building a receiver in preparation. G5WP.

DISTRICT 8 (Home Counties)

Deputy D.R.: L. W. Jones (G5JO), 16 Leys Road, Cambridge. Tel.: Cambridge 3406.

Fewer members have reported this month but news has been received of Major Chapple, G6SC, who can be contacted between 6.30 and 8 p.m. most evenings on Luton 621, and also from BRS5332 who is at Queen's College, Cambridge.

Cambridge.—A meeting has been arranged to take place on Saturday, March 20, in the lounge of the Milton Arms Hotel, Milton Road, Cambridge, when tea will be served from 4 p.m. Members who wish to attend (and it is hoped there will be a lot), are requested to advise G5JO by Wednesday, March 17, latest in order that final arrangements can be made. A further announcement will appear next month.

G2XV and 5BQ visited 5JO recently, and, both are very busy. SSY is rejoining the Society. 3JU has been most helpful in supplying information about members in the Dunstable, Bedford and Luton areas, and it is hoped that we shall see some of them at our meeting. 6BP is now near Norwich after a short stay in Cambridge. 2XV is open to take bets as to the date on which licenses will be restored and expects to make enough money to buy himself a complete new rig!

Luton.—Mr. A. G. Tearle, G3KG, 26 Farley Avenue, Luton, reports that there was an attendance of 15 at the January meeting. Those present included BRS1060, 4882, 5274, 5670, 5770, 5859. Photographs from 4760 (North Wales) were examined with interest. The Services were well represented.

The next meeting is to be held on February 27, at 3 p.m., at the "Bizzie Bee Café," Bury Park Road, when Post-War Planning will be discussed. G5JO.

DISTRICT 10 (South Wales & Monmouthshire)

Scribe: H. H. Phillips (GW4KQ), 82 Cottrell Road, Roath Park, Cardiff. Cardiff 2697 during business hours.

Cardiff.—A discussion on V.H.F. technicalities and post-war aims took place at the January meeting held at GWSUH. Those present included GW2UH, 4KQ, 5WU, SUH and 2008. The next meeting is to be held at 3 p.m., February 28, at the home of GWSUH, 29 Ladysmith Road—off Penylan Hill—Roath Park, Cardiff. A letter has been received from 2AMZ, temporarily stationed in District 11. 5610 has been on a short leave. Congrats are offered to 8NP on his promotion to Sq./Ldr. and a cordial welcome to 5753 who has joined since the last notes appeared.

Newport.—A welcome letter is to hand from 2JL who gives news of 2XX, 2CAF and 3491. 2DBO now a Captain in the R.E.M.E. has been on leave.

Haverfordwest.—Mr. Rees, 5369, would welcome news from service members stationed near his address—The Post Office, Puncteston, Haverfordwest—with a view to arranging a local meeting.

Members willing to serve as TR's for Newport and Swansea are invited to communicate with the Scribe. News would be welcomed from District members now away from home and in particular from GW2NG, 4FW and 2CDM. GW4KQ.

DISTRICT 11 (North Wales)

Deputy D.R.: C. Spillane (BRS1060), "Woodside," Meliden Road, Prestatyn.

The meeting held at 4762 on January 24, brought nine members together, including VE4AQY (whom we are pleased to welcome to the District), BRS4760 (a visitor from No. 8), GM6IW, BRS2731, 3044, 4528, 4762, 5837 and a prospective member Mr. Hepworth.

2731 demonstrated a Hallicrafter receiver which aroused a lot of interest; discussions on V.H.F. and amplifiers followed. A few items of Junk were put up for auction. We can undertake to dispose of any useful surplus gear, so how about doing some spring cleaning? If you cannot bring it in person send it to BRS4762.

The February meeting will be over by the time these notes appear, so we can only announce that the March meeting will be held on the 21st, at Vale View, Meliden Road, Prestatyn (3 p.m.). 4728 (Ruthin) writes to say he has been home on leave, and may shortly be posted abroad. VE3AAA known to a number of members, celebrated his promotion to sergeant, by announcing his marriage. Following VE4YG's example he has married a W.A.A.F. from the station on which he has been working. Sgt. Marsden, 4040, until recently a regular visitor to our meetings is now reported in GM, he too has just received his 3rd stripe. 4020 in a letter from VU reports reading THE BULLETIN account of the June P.D.M. He sends 73 to all members. He is now a Flt./Sgt. Thanks are due to our visiting members for news of their activities, but we could do with more items from local members. BRS1060.

DISTRICT 12 (London North and Herts)

D.R.: S. Buckingham (G5QF), 41 Brunswick Park Road, New Southgate, N.11. Enterprise 3112.

In spite of a howling gale and driving rain in the Straits of Dover, an attendance of 30 plus was recorded at The Cock, Cockfosters, on January 31. Following a "super tea-fight" F./Lt. Bert Simpson, G8DI, spoke of the adventures of "The Second Earlies." The "pukka gen" he imparted was warmly appreciated by all present. Although a pre-war member of the District Sgt. "Jock" Kyle, D.F.M. (G6WL) will never be able to pass muster as a true Cockney. In delightful style Jock told us of some of his experiences since volunteering for the R.A.F.V.R. in September, 1939, but he did not tell us how he won his Distinguished Flying Medal. We could only guess. Neither did he mention how many hundreds of flying hours he has to his credit, nor did he reveal that he is now close on 50!

Other visitors, warmly welcomed, were Chas. Spillane, 1060 (Deputy D.R. for North Wales), Stan Higson, GW2PH (sporting

Forthcoming Events

- | | |
|---------|--|
| Feb. 20 | District 15, 6.30 p.m. at 2ADL, 106 Cavendish Avenue, West Ealing, W.13. Buses 65 or 97, to Argyle Road. |
| Feb. 21 | District 4 (Leicester section) 2.30 p.m. at G2IX, 19 Francis Avenue, Narborough Road South. |
| Feb. 21 | District 4 (Nottingham section), 6.30 p.m. at 61 Abbey Street, Lenton. |
| Feb. 21 | District 5, 3 p.m. at 17 Colston Avenue, Centre, Bristol. |
| Feb. 21 | District 13, 3 p.m. at G4KY, 59 Claverdale Road, Brixton Hill, S.W.2. |
| Feb. 21 | District 14, 3 p.m. at G8DG, 8 Bosgrove, The Ridgway, N. Chingford. |
| Feb. 21 | District 15 (High Wycombe section), 2.30 p.m. at BRS4781, 37 Melbourne Road, Mickfield Estate. No. 326 Bus every 15 minutes from Castle Street. |
| Feb. 27 | London Meeting. 2.30 p.m. at the I.E.E. Lecture "Diversity Reception" by H. V. Griffiths, Engineer-in-Charge B.B.C. Receiving and Measurement Station. |
| Feb. 27 | District 8 (Luton section), 3 p.m. at "Bizzie Bee Cafe," Bury Park Road. Discussion: Post-War Planning. |
| Feb. 28 | District 10, 3 p.m. at GWSUH, 29 Ladysmith Road, Roath Park, Cardiff. |
| Feb. 28 | District 12, 3 p.m. at BRS3386, 22 Church Hill, Winchmore Hill, N.21. |
| Feb. 28 | Scottish "A" District. The meeting will not be held in Glasgow Royal Technical College. Phone Giffnock 2513 for details. Lecture by Sgt. Valchera on Television. |
| Feb. 28 | Scottish "C" District, 3 p.m. in Dundee Wireless College, 7 Airlie Place. Lecturette by GM3IX on Batteries. |
| Mar. 16 | Scottish "A" District, 7.30 p.m. in the Institute of Engineers and Shipbuilders, 39 Elmbank Crescent, Glasgow. |
| Mar. 20 | District 8, 3.30 p.m. at Milton Arms Hotel, Milton Road, Cambridge. |

a brand new "crown"), Cecil Bradbury, 1066 (William the Conqueror), "Dud" Charman, G6CJ (bemoaning the loss of a 60-footer in the gale), and E. S. G. Fish, 2HCZ (Bethesda, N. Wales). The presence of F./O. and Mrs. Reg. Radford, G2IM, appeared to "shake" G6CL and others.

During the evening a six-a-side Quiz between a team of ladies and visitors from other Districts, resulted in a win for the latter by 8 points to 6½. "Dud" functioned as "teller" whilst G6CL and 60T "shot the questions."

It is better to draw a veil over the last three hours. All that we can remember is that the 10.30 p.m. bus from the Cock seemed to be full of dark shapes murmuring something about "Crisps."

It is hoped to arrange a dinner towards the end of March, in the meantime members are asked to note that the next "normal" meeting will be held at 3 p.m. on February 28 at 22 Church Hill, Winchmore Hill. Book to Chase Side Tavern by 244 bus from Southgate Tube Station. Mr. Laister, BRS3386, will act as host. G5QF.

DISTRICT 13 (London South)

A.R.'s: (Southern Eastern and Central), S. E. Jangle (G3ST), 62 Dumbarton Road, S.W.2. (Western), E. H. Simmonds (G8QH), 17 Roedean Crescent, Roehampton, S.W.15. Prospect 1990.

South-Western Area.—Who has the log, please? A week overdue at time of going to press. 2JK, BRS5167 and BRS4292 report by letter. (Thanks for news O.M.'s!) 6DT keeps in touch by landline. 2FCJ from a neighbouring district paid a call during leave and spent a busman's holiday working on his receiver. More news next month when the log comes home to roost. 73 to all!
G8QH.

Eleven non-service members were present at the January meeting held at G5PY. Conversation drifted into the usual channel of ham radio and the type of rig to build when peace returns. 4KY held everyone in suspense when describing his latest efforts in the direction of Communication Receiver building. The set includes all the latest refinements. If you don't believe it Attend our next meeting and see this masterpiece working for yourself. You won't be able to walk off with it but you may have all the dope! Our thanks are extended to G5PY for allowing us to meet at his home and also for the refreshments provided. A collection amounting to 8s. 6d. was made for the P.O.W. Fund. J. Ballard (2HDY) who has now joined R. Sigs. sends 73 to all in District 13.
G3ST.

DISTRICT 14 (Eastern)

D.R.: R. L. Varney (G5RV), 184 Galleywood Road, Chelmsford, Essex. Chelmsford 3394.

Chelmsford.—G5RV, 6LB and 3555 are busy testing their newly-completed superhets. Results are very promising. 5HF is interested in industrial applications of radio circuits. 2SA continues to be one of the mainstays of his H.G. unit. 6ZC has prepared final designs for a revolutionary receiver circuit of which we hope to give more details later. 8PB should be home on leave again soon. (Your January BULL. was returned to H.Q. Peter. How come? Ed.) 5242 has made a really fine B.C. receiver and is building an H.F. converter to go with it. Mal Geddes, 2SO, having emerged from "retirement" has appeared among the gang again! 3650 continues to attend faithfully at meetings but has nothing to report; H.G. duties take up a good deal of his spare time. We are happy to find VE4AAV temporarily in our midst; he intends to be present at the forthcoming local meeting.

Southend.—G2SO reports that 5XI is now at an R.N. "OCTU" after a pleasant "holiday" in North Africa! (Good luck, Bert, and very best wishes for success with your well-earned commission.—D.R.) 5VQ continues his good work with the A.T.C. Congrats. to 2LC who is now a proud parent. 2SO is enjoying life in the R.A.F. His brother, 4023, is still in the M.E. 2GU prepares for better days by building U.H.F. receivers while on leave. 6CT visited 2SO recently. What has happened to 30A, 2KH and 5UK?

Chingford.—G8DG reports that G2HR, 2DXL, 5679 and 5726 attended the January meeting at his temporary address, when magnetic and crystal pick-ups were compared and demonstrated. The former type won; although it is hoped to vindicate the crystal type later!

Another meeting will be held at 8 Bosgrove, The Ridgeway, North Chingford, on February 21, at 3 p.m. (Take No. 38 bus to Endlebury Road.)
G5RV.

DISTRICT 15 (London West, Middlesex and Buckinghamshire)

D.R.: H. V. Wilkins (G6WN), 539 Oldfield Lane, Sudbury Hill, Greenford, Middlesex. Byron 3369.

In a letter to HQs., 2BCN reports his safe arrival in VK after visiting much DX on the way! He has not yet met any hams but he listens to B.B.C. and U.S.A. broadcasts.

G2QY is congratulated on the splendid letter budget he is running for the Edgware Society. The current issue contains letters from G3HT and 4KD who are now sporting two R.A.F. rings. The former is still in Scotland while the latter has moved to Cornwall. 6PM (R. Sigs.) is stationed in North London, 2IM is busy with receiving aeriels. 2KI reports well, 2FCJ finds difficulty in sewing on tapes, 4994 looks forward to getting his posting. 3750 telephoned the D.R. while on leave from the R.A.F. in Yorkshire and solicited news of the Thames Valley gang.

High Wycombe.—BRS4780, 4781, 4782, 5156, 5666 and 5867 were present at the January meeting at G6IF. They saw his shack, snaps of pre-war gear and scale plans for post-war activities. On exhibition also was a bug key made from drawings published in the January BULLETIN. 4871 also produced another home-made key. Discussion centered round crystal reception on 2½ meters. Local members seek suggestions and information on this subject from other readers. Thanks are extended to G6IF and his wife for their hospitality. H.W. members should send news for inclusion in these notes to C.M. Freer (4781), 37 Melbourne Road, Mickfield Estate, by the 22nd.

A welcome is extended to all new members to the District and we look forward to seeing them at our meetings. A P.C. in advance is all that we ask.
G6WN.

DISTRICT 17 (Mid East)

D.R.: Dr. A. Gee (G2UK), "Stonehaven," Horncastle Road, Boston, Lincs.

Boston.—Sgt. Marris, 2BZQ—to whom we extend congrats on his promotion—sends best wishes to all old friends. He is hoping to go overseas again shortly.

Grimsbby.—Mr. Jackson, G5MT, and Mr. Smith, are building a Morse recorder in their spare time.

Lincoln.—A welcome to S. M. Gambles (G4GI), whom we are pleased to greet as a new member.
G2UK.

DISTRICT 18 (East Yorkshire)

District Scribe.: S. Davison (G6SO), 10 Sidney Street, Scarborough.

Hull.—As the result of the appeal by G6SO, letters and cards have been received from A. Bell, G2XA, C. R. S. Moon, G5MN (R.A.F.), C. Simmonds, 2BZW, and C. Grafton, 2CGL (R.A.F.) who is now married, 4405 acting as best man. A. Blackburn, 2CCB, who is serving with the 8th Army would like to hear from G3IU, J. C. Raettig, 5326, a W.O.M. who has met many hams during his spell with the R.A.F., sends 73 to all local members. F. W. Ellis, 4043 (R.A.F.) is busy installing radio equipment in "kites." D. Armstrong, 3271, puts forward a suggestion to hold meetings in Beverley; how does this appeal to members in that area?

G8UL has received visits from R. Spivey, 2ARP (R.A.F.) and A. Beautelement, 2CNX (R.A.F.). A welcome is extended to Messrs. N. K. Green, 5794, G. H. Gledhill, 5804, and M. G. Bulmer, 5839, new members. Thanks are expressed to A. Dunn, G3PL, for compiling a list of local members. 73 to all who are serving at home and abroad.
(Via G8UL.)

Scarborough.—G8KU (R.N.V.R.) a P.O.W. in Germany, is delighted with the safe arrival of his first parcel of smokes sent by the Society. He sends 73 to G6CL, G3OJ and G3WP and all other old friends. After two years in Aden, Tom Brackenbury, G8BB (R.N. Civilian radio op.) is on the move again and expects to be home on leave shortly.

A welcome is extended to the following new members: K. Knott, 5748 (York), R. G. Pawson, junior (York), H. M. Mills, 5796 (Whitby), and K. Hoole, 5841 (Scarborough). G6SO thanks all who have sent letters.
G6SO.

Scotland

Scottish Records Officer: J. Hunter (GM6ZV), 51 Camphill Avenue, Glasgow, S.1. Langside-237.

"A" District.—At the mid-January meeting local members welcomed GM3QM and 4MM who were home on leave. A "Hat" question and answer was held during the evening. The meeting on February 28 will not be held at The Royal Technical College, but members will be notified by post of the venue. Those who do not receive notification are asked to 'phone Giffnock 2513 for details. 3AR will be glad to hear from anyone with a gas triode for sale. 6MS is leaving the District for the South.

"C" District.—The District committee have arranged future meetings to be held on the last Sunday of each month at Dundee Wireless College. At the first, fixed for January 31, a lecture/review was due to be given by GM3CF on transmitters. Membership in the district is showing a healthy increase and interest is becoming keen. The D.O. has received items of news from Service members but more will be welcome. 5SC is almost fit again, 4NR reports promotion to Leading Radio Mechanic in the Navy, 2DGW (of District 12) hopes to attend local meetings. All "C" members should by now have received an agenda of the subjects to be dealt with at future meetings.

"H" District.—Tommy Simpson (2761) advises the D.O. that he is now O.C. of a Signal Unit. When on exercises some time ago he discovered that the man handling "the works" at the other end was 4JC! 4615 sent in a letter to show that he is still attached. He reports spending an evening with 8MN while on holiday. 6JJ and 8MQ were on leave at the New Year. More notes are needed.
GM6ZV.

Northern Ireland

D.R.: J. N. Smith (GI5QX), 19 Hawthornden Drive, Belmont, Belfast. Belfast 6323.

We regret to report that Frank Robb, GI6TK, a leading light at the Y.M.C.A. Radio Club, is seriously ill. We wish him a speedy recovery.

Local members who knew F.O. Stan Clark, 2AMW, were grieved to hear of his death and take this opportunity of recording sincere sympathies to his wife.

Congratulations are offered to 2FJS who has been promoted to the rank of P.O. SPR reports well from somewhere out East. VE5ZM at present in Belfast is doing the rounds of GI contacts. GI3VQ reports meeting SU1AX, 1SG, 1RD, 2DTQ, and G8LO whilst in Alexandria last February. He had the good fortune to attend ham gatherings at SU1AX and SU1AG and was also entertained by SU1RD. He extends thanks to all those who made him feel at home in a strange land. One of the high lights of the meeting at SU1SG was the showing of a film taken during the last Egyptian N.F.D.
GI5QX.

HEADQUARTERS CALLING

December Council Meeting

Resume of the Minutes of a Council Meeting held at the Institution of Electrical Engineers, London, on Monday, December 14, 1942, at 6 p.m.

Present.—Mr. A. D. Gay (President), Messrs. E. L. Gardiner, A. E. Watts, H. A. M. Clark, G. A. Jessup, S. K. Lewer, W. H. Matthews, E. H. Simmonds, A. J. H. Watson and J. Clarri coats (General Secretary).

Apologies were received from Messrs. J. W. Mathews and W. A. Starr.

1. One hundred and fifty-two applicants for membership were accepted (29 supported by references, 123 sponsored by Corporate members). An application for affiliation from the Amateur Radio Society of University College, Southampton, was granted.

2. It was agreed to hold meetings at the I.E.E. on the following Saturday afternoons during 1943: February 27, March 27, May 1 and May 29.

3. Matters relating to post-war licensing conditions were considered.

4. A letter was read from H.M. Treasury thanking the Society for making a further loan of £500 free of interest to the Government. (A copy of the letter was published in the January issue).

5. Ten members were awarded Honoraria for technical contributions to Volume 17 of the Society's Journal. (A list of names appeared in the January issue.)

Co-opted Members to Serve on Council

The newly-elected Council has co-opted Messrs. S. K. Lewer, G6LJ, W. H. Matthews, G2CD and W. E. Russell, G5WP, to serve on that body. Mr. Russell, who is making his debut as a Council member, has been District 7 representative for several years. Messrs. Lewer and Matthews served on the 1942 Council as elected members.

R.S.G.B. Prisoners of War Fund

The Society's Prisoners of War Fund has been exempted from registration, under the War Charities Act, 1940, by the Southgate Borough Council.

I.E.E. Meetings

Mr. H. V. Griffiths, Engineer-in-Charge, B.B.C. Measurement and Receiving Station, will lecture on "Diversity Reception" at the meeting to be held on Saturday, February 27, at the Institution of Electrical Engineers, London. The lecture will commence at 2.30 p.m.

It is hoped that all members resident in the London area will support this meeting.

There was an attendance of about 50 at the January meeting when Mr. A. Hine, B.Sc. (Tech.), BRS4438, described Cathode Coupled Circuits. The chair was taken by Mr. A. D. Gay, (President). Messrs. D. N. Corfield, G5CD, H. C. Spencer, G6NA, J. W. Kyle, G6WL and S. C. Chapple, G6SC, contributed to the discussion following which a vote of thanks to the lecturer, moved by Mr. S. K. Lewer, G6LJ, and seconded by F./Lt. H. W. Simpson, G8DI, was carried with acclamation.

The first part of Mr. Hine's lecture is published in the current issue of this Journal.

Sales Department

For the information of newer members we give below a list of items available from Headquarters:—

Amateur Radio Handbook	..	Cloth Cover	s. d.
"	"	Paper Cover	6 6
"	"	"	4 0
Radio Handbook Supplement	..	Cloth Cover	5 6
"	"	Paper Cover	2 9
Car Plaque (T. & R. Emblem)	..	"	3 6
Rubber Stamp (T. & R. Emblem)	..	"	3 0
Kiloycles to Metres Conversion Tables in pocket book format	..	"	1 6

All prices quoted include postage.

American Publications

The following American publications may be ordered through the Society:—

QST	..	s. d.
Radio Amateur Handbook (A.R.R.L.)	..	17 6 p.a.
Antenna Handbook (A.R.R.L.)	..	10 6
"Radio" Handbook (E. & E. Ltd.)	..	4 0
"Radio" Handbook (E. & E. Ltd.)	..	12 0

Delivery can be expected in about 3 months from date of order. Service addresses must not be used and cash must accompany each order.

Subscriptions to "Radio" cannot be accepted at present.

U.S. Amateurs Answer the Call for Meters

It is interesting to record that, following the appeal made in 1941 to British amateurs to offer their meters to the Services, American amateurs are being urged to show a similar patriotic spirit. The November issue of *QST* carried an urgent appeal from the Signal Corps for meters of all types. Within a few days hundreds had been received but many more are still required. To quote from the December *QST* "The call is out—let all patriotic meters and their owners now stand up and be counted!"

Footnote.—Have you any meters to spare? If so send a note to Headquarters listing your offers.

Calling Lady Members

Mrs. Anita Bien, W8TAY, President of the Young Ladies' Radio League, whose address is 13 Wiltshire Road, Route 3, Chagrin Falls, Ohio, would like to hear from lady members of the R.S.G.B. who are not yet members of her organisation. W8TAY would also appreciate items of news for inclusion in "YL Harmonies," official publication of the League.

As some 30 ladies are now in membership with the Society perhaps one among them would like to act as Liaison Officer with the Y.L.R.L.

NEW MEMBERS

Life Member

C. F. HABERER (BRS1225), 2 Addison Road, London, W.14.

Home Corporates

G. W. McDONALD (GM20X), c/o Fleming, The Club, Green Street, Radcliffe, Manchester.

E. H. HOPKINS (G2XN), Allandale, Birchfield Road, Headless Cross, Redditch.

P. B. JACKSON (G3WQ), 12 New Street, Selby, Yorks.

S. H. PATTISON (G15UW), Rathdene, Ulster Av., Dunmurry, N.I.

E. G. NURSE (G5NR), 540 Whitton Av. West, Greenford, Middx.

P. MODRIDGE (G6PM), 50 Tonbridge Crescent, Kenton, Middx.

A. STRAUGHAN (G6SD), 38 Main Street, Keswick, Cumb.

E. A. PARSONS (G6SU), Greenwood, Hollingbury Rise W, Brighton 6

D. C. THURSTON (G6TU), Cable Station, Hamilton, Bermuda.

R. J. CRUTCHLEY (G6WI), 3 The Cottages, Beacon Hill, Rubery, Worc.

R. A. SPEARS (G8AZ), 72 Rocky Lane, Broadgreen, Liverpool, 16.

A CORDIAL WELCOME IS EXTENDED TO THE

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NEW MEMBERS WHOSE NAMES ARE LISTED

F. HAMER (G8BW), 91 Molefield Estate, King Edward Avenue Aylesbury.

H. R. SCOBELL (G8GT), 31a Ravenscroft Park, Barnet.

J. H. HEMINGWAY (G8ID), 131 Ingram Road, Thornton Heath.

J. SKIDMORE (2AUL), 4 Bridge Hill, Belper, Nr. Derby.

F. J. BEDSON (2B8O), Bush Barn, Robertsbridge, Sussex.

B. R. MEREDITH (2CYV), 81 Loughborough Park, London, S.W.9.

F. S. HOLMAN (2DAH), 15 Saint David's Square, Rhyl.

J. TAYLOR (2DBX), Chemist, Sandwell Street, Buckhaven, Fife.

R. J. LEE (2HLF), 9 Theobalds Green, Heathfield, Sussex.

Home Corporates (B.R.S.)

A. G. ANDERSON (5857), 87 Braemar Place, Aberdeen.

D. A. R. JACKSON (5858), 16 Chesham Pl., Kemp Town, Brighton.

E. W. RANDELL (5859), 299 Lower Morden Lane, Morden, Sy.

J. A. POPPLE (5860), 2 Cranleigh Avenue, Hanley, Stoke-on-Trent.

J. H. WHALE (5861), 11 Well Lane, Leamore, Walsall.

J. G. TAYLOR (5862), Station Road, Heacham, King's Lynn.

W. A. W. LAUNDER (5863), 1 Church Street, Mexborough, Yorks.

F. W. LILLEY (5864), 15 Ampton, Nr. Bury St. Edmunds.

H. D. ARMSTRONG (5865), Abbeville, Hamble La., Hamble, Hants.

P. A. THOROGOOD (5866), 51 Nightingale Road, Hitchin.

R. E. EALES (5867), 21 Aylesbury End, Beaconsfield, Bucks.

J. A. MITCHELL (5868), 28 Emerson Road, Newbiggin-by-Sea, Northumberland.

C. A. STEER (5869), Flat 21, 50 Sloane Street, London, S.W.1.

J. H. WALKER (5870), The Hill, Limpfenhoe, Norwich.

R. RITCHIE (5871), 26 Stimpson Avenue, Northampton.

W. C. BARTHOPE (5872), 25 Stowell Road, Birmingham, 22C.

A. LAWS (5873), Hillside, Neilston, Glasgow.

F. W. KEENE (5874), Cloughy, County Down, N. Ireland.

D. BALL (5875), 25 Hillcrest Road, Romford, Essex.

R. MCCLYMONT (5876), 28 Peebles Street, Ayr, Scotland.

R. A. MAWDSLEY (5877), 7 Trinton Close, Sale, Cheshire.

T. W. TREDDLE (5878), 557 Fletchamstead, Highway, Coventry.

F. W. MILLER (5879), 6b Marsh Hill, Homerton, London, S.E.9.

F. GOODMAN, B.Sc. (5880), 53 Ashlar Road, Liverpool, 17.

R. J. BERRIDGE (5881) Ditchford, Nobles Green, Southend-on-Sea.
 E. W. NIELD (5882) 24 Sketty Avenue, Sketty, Swansea.
 E. WILLIAMS (5883) 25 Glenmore Road, Birkenhead, Cheshire.
 J. F. BURNS (5884) Greenfield Cttge., Paxton, Berwick-on-Tweed.
 G. A. COVENEY (5885) 4 Lower Grove Road, Havant, Hants.
 J. Q. OWEN (5886) 39 Alexandra Park Street, Glasgow, E.1.
 W. E. COX (5887) 209 Eastcote Road, Ruislip, Middx.
 G. T. HARRISON (5888) Victoria House, Tean, Stoke-on-Trent.
 W. H. BEACHAM (5889) 19 Gayner Road, Filton, Bristol, 7.
 A. E. GAME (5890) c/o Lloyds Bank, 40 Rosslyn Hill, London, N.W.3.

L. E. CORNORE (5891) 61 Walpole Road, Bournemouth.
 R. E. A. LACEY (5892) 79 Stillingfleet Road, Castelnau, London, S.W.13.

J. C. BUTTREY (5893) 8 Fountain Street, Morley, Leeds.
 R. J. WADEY (5894) Hillcrest, Oxford Rd., Gerrards Cross, Bucks.
 G. C. YOUNG (5895) 106 Cairns Street, Kirkcaldy, Fife.
 T. L. DAVIES (5896) Kersley, Ashbank, Bucknall, Stoke-on-Trent.
 S. W. H. HILL (5897) 101 Sudbury Heights Rd., Greenford, Mdx.
 N. F. FELTON (5898) 84 St. Margarets Rd., Twickenham, Middx.
 F. E. SIDGWICK (5899) 6 Rowantree Road, Walkerville, Newcastle-on-Tyne, 6.

R. HARVEY (5900) 167 Didsbury Rd., Heaton Norris, Stockport.
 W. A. COOKE (5901) 1 Sherwood Rd., Lightwood, Stoke-on-Trent.
 L. CUSHION (5902) 14 Bilslyside Av., Craigtintny, Edinburgh, 7.
 F. W. PARKINSON (5903) 10 Warwick Road, Margate, Kent.
 J. W. WINSTANLEY (5904) 33 Maldon Road, Kensington, Liverpool, 6.

C. A. CARRINGTON (5905) 20 Mount Echo Avenue, London, E.4.
 E. W. WOODROFFE (5906) 55 Sherwood Rise, Nottingham.
 A. MACDONALD (5907) 49 Aberfoyle Street, Glasgow, E.1.
 S. W. EARL (5908) 18 Portmore Rd., Portstewart, Co. Derry, N.I.
 J. M. SHARKEY (5909) 104 Weir Street, Kingston, Glasgow.
 C. H. B. LIGHT (5910) 24 Forest Croft, Taymount Rise, London, S.E.23.

C. A. MOSS (5911) 183 Desborough Av., High Wycombe, Bucks.
 E. C. SILLS (5912) 10 All Saints Rd., Queens Park, Bedford.
 R. BENNETT (5913) 23 St. Amos Rd., Denton, Manchester.
 D. A. J. WHEELER (5914) Fairholme, Cobham Road, Fetcham, Leatherhead.

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 J. B. BOWER (Junior), 34 Holmdens Avenue, N. Harrow, Middx.
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New Books

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*O Maid whose charm could conquer all,
 Say you'll be mine and share my "Call."
 No Signal Shifter has such pep,
 You'd suit me like an End Fed Zepp.*

*Form divine as a National set
 Hair as fine as a Sterba Net,
 Lips as red as a Pilot Light,
 Eyes that sparkle—kilowatt bright.*

*Streamlined as a Push Pull rig,
 As constant as a Crystal set,
 "Webbs" and "Raymarts" latest gear
 Mean less to me than you, My Dear!*

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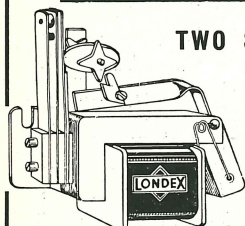
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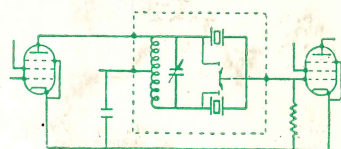
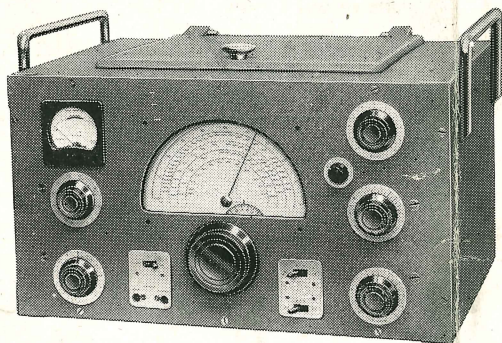
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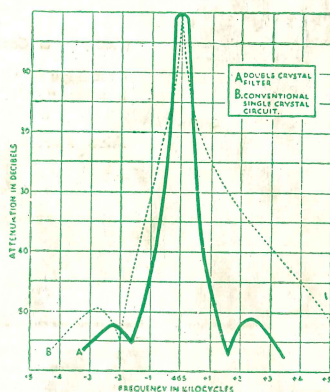
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